

# COVID-19 Correlates Immunogenicity Analysis Report

COVID-19 Prevention Network (CoVPN) Biostatistics Team

March 06, 2021



# Contents

1	Graphical Description of Immunogenicity Data	9
1.1	Pairs plots of antibody markers for overall per-protocol cohort	9
1.2	RCDF plots of antibody markers for overall per-protocol cohort	17
1.3	Scatter plots of antibody markers versus age for overall per-protocol cohort	17
1.4	Box plots of antibody markers for overall per-protocol cohort	18
1.5	Spaghetti plots of antibody markers over time for the overall per-protocol cohort	19
1.6	RCDF plots of antibody markers by demographics for per-protocol cohort	20
1.7	Boxplots of antibody markers by demographics for per-protocol cohort	20
2	Tabular Description of Immunogenicity Data	153



# List of Tables

2.1	Table 1. Demographic . . . . .	153
2.2	Table 2a. Responder rates by All participants . . . . .	154
2.3	Table 2b. Responder rates by Age . . . . .	157
2.4	Table 2c. Responder rates by Risk for Severe Covid-19 . . . . .	160
2.5	Table 2d. Responder rates by Age, Risk for Severe Covid-19 . . . . .	163
2.6	Table 2e. Responder rates by Sex . . . . .	168
2.7	Table 2f. Responder rates by Age, sex . . . . .	171
2.8	Table 2g. Responder rates by Hispanic or Latino ethnicity . . . . .	176
2.9	Table 2h. Responder rates by Race . . . . .	180
2.10	Table 2i. Responder rates by Race and ethnic group . . . . .	188
2.11	Table 2j. Responder rates by Age, Race and ethnic group . . . . .	191
2.12	Table 3a. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by All participants . . . . .	196
2.13	Table 3b. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age . . . . .	198
2.14	Table 3c. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Risk for Severe Covid-19 . . . . .	200
2.15	Table 3d. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Risk for Severe Covid-19 . . . . .	202
2.16	Table 3e. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Sex . . . . .	205
2.17	Table 3f. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, sex . . . . .	207
2.18	Table 3g. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Hispanic or Latino ethnicity . . . . .	210

2.19	Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race . . . . .	213
2.20	Table 3i. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race and ethnic group . . . . .	219
2.21	Table 3j. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Race and ethnic group . . . . .	221
2.22	Table 4a. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by All participants . . . . .	224
2.23	Table 4b. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age . . . . .	226
2.24	Table 4c. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Risk for Severe Covid-19	228
2.25	Table 4d. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Risk for Severe Covid-19 . . . . .	230
2.26	Table 4e. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Sex . . . . .	233
2.27	Table 4f. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, sex . . . . .	235
2.28	Table 4g. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Hispanic or Latino ethnicity . . . . .	238
2.29	Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race . . . . .	241
2.30	Table 4i. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race and ethnic group	247
2.31	Table 4j. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Race and ethnic group . . . . .	249
2.32	Table 5. Ratios of GMTs/GMCs between the vaccine arm vs. placebo arm, by baseline status . . . . .	252
2.33	Table 6. Ratios of GMTs/GMCs between baseline positive participants vs. negative participants, among the vaccine recipients . . . . .	253
2.34	Table 7. Ratios of GMTs/GMCs between demographic subgroups among the vaccine recipients . . . . .	254
2.35	Table 8a. Differences of responder rates between the vaccine arm and the placebo arm by All participants . . . . .	257

2.36 Table 8b. Differences of responder rates between the vaccine arm and the placebo arm by Age . . . . .	259
2.37 Table 8c. Differences of responder rates between the vaccine arm and the placebo arm by Risk for Severe Covid-19 . . . . .	262
2.38 Table 8d. Differences of responder rates between the vaccine arm and the placebo arm by Age, Risk for Severe Covid-19 . . . . .	265
2.39 Table 8e. Differences of responder rates between the vaccine arm and the placebo arm by Sex . . . . .	269
2.40 Table 8f. Differences of responder rates between the vaccine arm and the placebo arm by Age, sex . . . . .	272
2.41 Table 8g. Differences of responder rates between the vaccine arm and the placebo arm by Hispanic or Latino ethnicity . . . . .	276
2.42 Table 8h. Differences of responder rates between the vaccine arm and the placebo arm by Race . . . . .	279
2.43 Table 8i. Differences of responder rates between the vaccine arm and the placebo arm by Race and ethnic group . . . . .	287
2.44 Table 8j. Differences of responder rates between the vaccine arm and the placebo arm by Age, Race and ethnic group . . . . .	290



# List of Figures

1.1 (Mock data) Pair plots of D57 Ab markers: baseline negative vaccine arm . . . . .	10
1.2 (Mock data) Pair plots of D29 fold-rise over D1 Ab markers: baseline negative vaccine arm . . . . .	11
1.3 (Mock data) Pair plots of D57 fold-rise over D1 Ab markers: baseline negative vaccine arm . . . . .	12
1.4 (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to Spike: baseline negative vaccine arm . . . . .	13
1.5 (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to RBD: baseline negative vaccine arm . . . . .	14
1.6 (Mock data) Pair plots of D29 Ab markers: baseline positive vaccine arm . . . . .	15
1.7 (Mock data) Pair plots of D57 Ab markers: baseline positive vaccine arm . . . . .	16
1.8 (Mock data) Pair plots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm . . . . .	17
1.9 (Mock data) Pair plots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm . . . . .	18
1.10 (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to Spike: baseline negative placebo arm . . . . .	19
1.11 (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to RBD: baseline negative placebo arm . . . . .	20
1.12 (Mock data) RCDF plots for D29 Ab markers: by baseline status x randomization arm . . . . .	21
1.13 (Mock data) RCDF plots for D57 Ab markers: by baseline status x randomization arm . . . . .	22
1.14 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: by baseline status x randomization arm . . . . .	23
1.15 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: by baseline status x randomization arm . . . . .	24

1.16 (Mock data) RCDF plots for D29 Ab markers: by baseline status for the vaccine arm	25
1.17 (Mock data) RCDF plots for D57 Ab markers: by baseline status for the vaccine arm	25
1.18 (Mock data) RCDF plots for D29 over D1 fold-rise Ab markers: by baseline status for the vaccine arm . . . . .	26
1.19 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: by baseline status for the vaccine arm . . . . .	26
1.20 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm . . . . .	27
1.21 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm . . . . .	27
1.22 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm . . . . .	28
1.23 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm . . . . .	28
1.24 (Mock data) Scatter plots for D29 Ab markers vs. age: baseline negative vaccine arm	29
1.25 (Mock data) Scatter plots for D57 Ab markers vs. age: baseline negative vaccine arm	30
1.26 (Mock data) Scatter plots for D29 Ab markers vs. age: baseline positive vaccine arm	31
1.27 (Mock data) Scatter plots for D57 Ab markers vs. age: baseline positive vaccine arm	32
1.28 (Mock data) Boxplots of D29 Ab markers: baseline negative vaccine + placebo arms	33
1.29 (Mock data) Boxplots of D57 Ab markers: baseline negative vaccine + placebo arms	34
1.30 (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline negative vaccine + placebo arms . . . . .	35
1.31 (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline negative vaccine + placebo arms . . . . .	36
1.32 (Mock data) Boxplots of D29 Ab markers: baseline positive vaccine + placebo arms	37
1.33 (Mock data) Boxplots of D57 Ab markers: baseline positive vaccine + placebo arms	38
1.34 (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine + placebo arms . . . . .	39
1.35 (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine + placebo arms . . . . .	40
1.36 (Mock data) Boxplots of D29 Ab markers: baseline positive + negative vaccine arm	41
1.37 (Mock data) Boxplots of D57 Ab markers: baseline positive + negative vaccine arm	42
1.38 (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive + negative vaccine arm . . . . .	43
1.39 (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive + negative vaccine arm . . . . .	44
1.40 (Mock data) Boxplots of D29 Ab markers: baseline positive + negative placebo arm	45

## LIST OF FIGURES

## 11

1.41 (Mock data) Boxplots of D57 Ab markers: baseline positive + negative placebo arm	46
1.42 (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive + negative placebo arm . . . . .	47
1.43 (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive + negative placebo arm . . . . .	48
1.44 (Mock data) Spaghetti plots of Ab markers over time: baseline negative vaccine + placebo arm . . . . .	49
1.45 (Mock data) Spaghetti plots of Ab markers over time: baseline positive vaccine + placebo arm . . . . .	50
1.46 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age groups. . . . .	51
1.47 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age groups. . . . .	52
1.48 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age groups. . . . .	53
1.49 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age groups. . . . .	54
1.50 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by high-risk condition. . . . .	55
1.51 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by high-risk condition. . . . .	56
1.52 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by high-risk condition. . . . .	57
1.53 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by high-risk condition. . . . .	58
1.54 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and high-risk condition. . . . .	59
1.55 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and high-risk condition. . . . .	60
1.56 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and high-risk condition. . . . .	61
1.57 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and high-risk condition. . . . .	62
1.58 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by sex assigned at birth. . . . .	63
1.59 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by sex assigned at birth. . . . .	64

1.60 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by sex assigned at birth. . . . .	65
1.61 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by sex assigned at birth. . . . .	66
1.62 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and sex assigned at birth. . . . .	67
1.63 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and sex assigned at birth. . . . .	68
1.64 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and sex assigned at birth. . . . .	69
1.65 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and sex at birth. . . . .	70
1.66 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by ethnicity. . . . .	71
1.67 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by ethnicity. . . . .	72
1.68 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity. . . . .	73
1.69 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity. . . . .	74
1.70 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity. . . . .	75
1.71 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by race. . . . .	76
1.72 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by race. . . . .	77
1.73 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by race. . . . .	78
1.74 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by race. . . . .	79
1.75 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	80
1.76 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	81
1.77 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	82
1.78 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	83

1.79 (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	84
1.80 (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	85
1.81 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	86
1.82 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	87
1.83 (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age groups. . . . .	88
1.84 (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age groups. . . . .	89
1.85 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age groups. . . . .	90
1.86 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age groups. . . . .	91
1.87 (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	92
1.88 (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	93
1.89 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	94
1.90 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	95
1.91 (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	96
1.92 (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	97
1.93 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	98
1.94 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	99
1.95 (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	100
1.96 (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	101
1.97 (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	102

1.98 (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	103
1.99 (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	104
1.100(Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	105
1.101(Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	106
1.102(Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	107
1.103(Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	108
1.104(Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	109
1.105(Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	110
1.106(Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	111
1.107(Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by race. . . . .	112
1.108(Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by race. . . . .	113
1.109(Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by race. . . . .	114
1.110(Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by race. . . . .	115
1.111(Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	116
1.112(Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	117
1.113(Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	118
1.114(Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	119
1.115(Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	120
1.116(Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	121

1.117(Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	122
1.118(Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	123
1.119(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and sex assigned at birth. . . . .	124
1.120(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and sex assigned at birth. . . . .	125
1.121(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by ethnicity. . . . .	126
1.122(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by ethnicity. . . . .	127
1.123(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by race. . . . .	128
1.124(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by race. . . . .	129
1.125(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	130
1.126(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by dichotomous classification of race and ethnic group. . . . .	131
1.127(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	132
1.128(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	133
1.129(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age group. . . . .	134
1.130(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age group. . . . .	135
1.131(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	136
1.132(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition. . . . .	137
1.133(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	138
1.134(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition. . . . .	139
1.135(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	140

1.136(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth. . . . .	141
1.137(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	142
1.138(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth. . . . .	143
1.139(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	144
1.140(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity. . . . .	145
1.141(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by race. . . . .	146
1.142(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by race. . . . .	147
1.143(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	148
1.144(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group. . . . .	149
1.145(Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	150
1.146(Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group. . . . .	151

# Chapter 1

## Graphical Description of Immunogenicity Data

### 1.1 Pairs plots of antibody markers for overall per-protocol cohort

#### 1.1.1 Baseline SARS-CoV-2 Negative

\begin{figure}[ht]

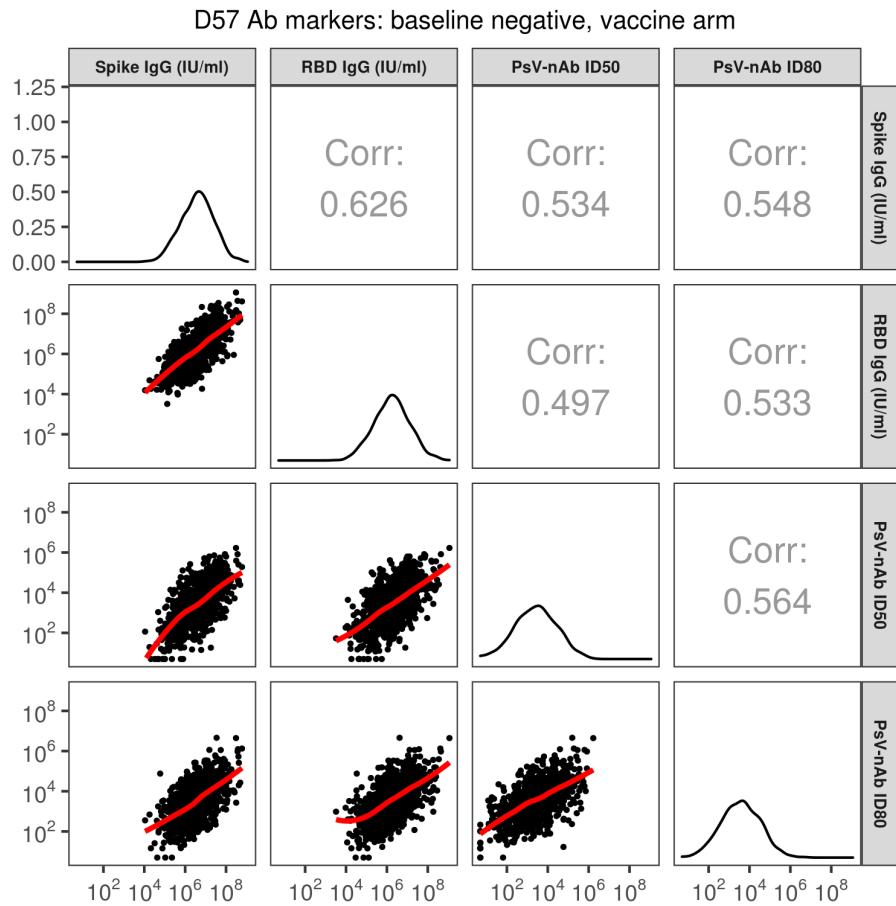
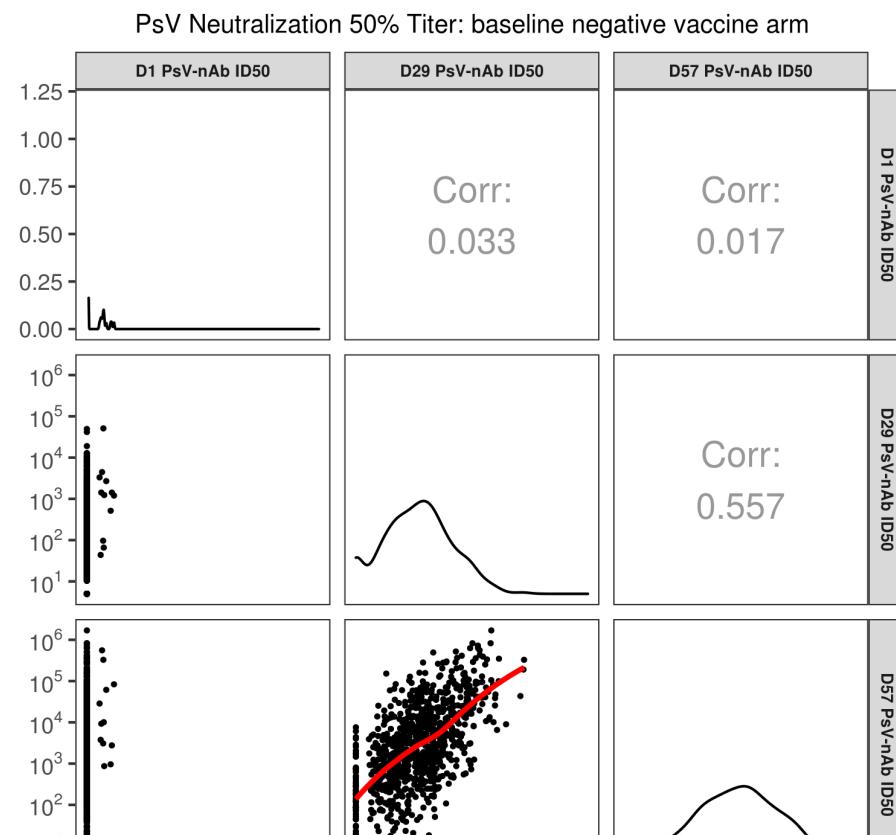


Figure 1.1: (Mock data) Pair plots of D57 Ab markers: baseline negative vaccine arm



## 1.1. PAIRS PLOTS OF ANTIBODY MARKERS FOR OVERALL PER-PROTOCOL COHORT19

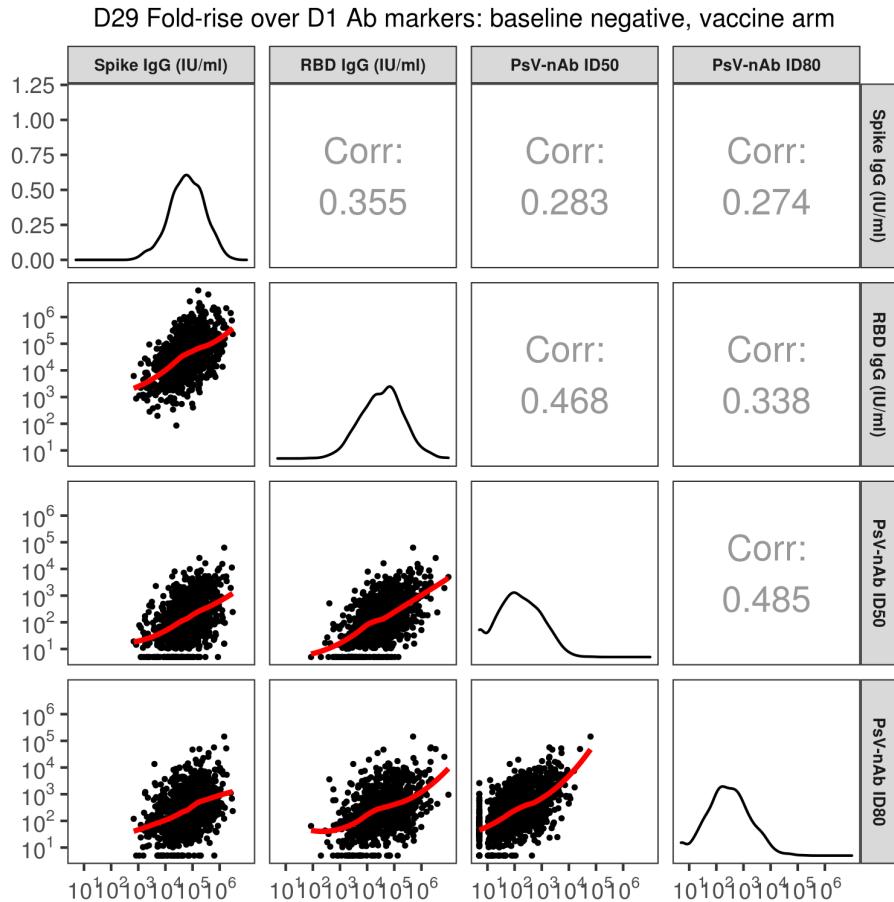


Figure 1.2: (Mock data) Pair plots of D29 fold-rise over D1 Ab markers: baseline negative vaccine arm

}

\caption{(Mock data) Pair plots of D1, D29 and D57 PsV Neutralization 50% Titer: baseline negative vaccine arm} \end{figure}

\begin{figure}[ht]

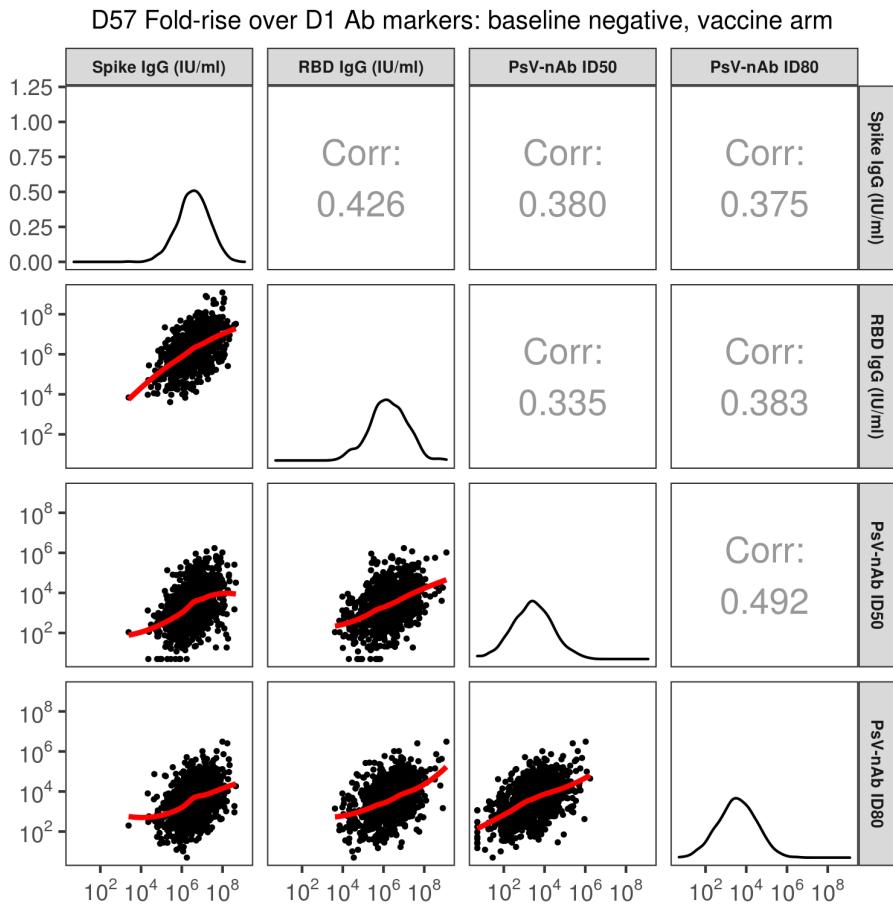
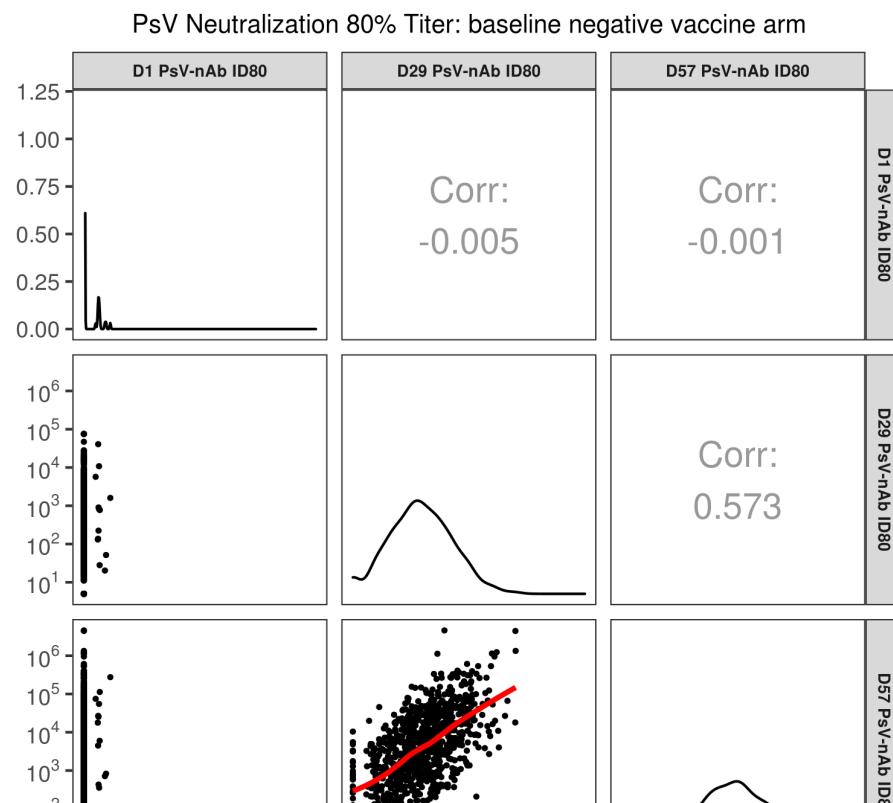


Figure 1.3: (Mock data) Pair plots of D57 fold-rise over D1 Ab markers: baseline negative vaccine arm



## 1.1. PAIRS PLOTS OF ANTIBODY MARKERS FOR OVERALL PER-PROTOCOL COHORT21

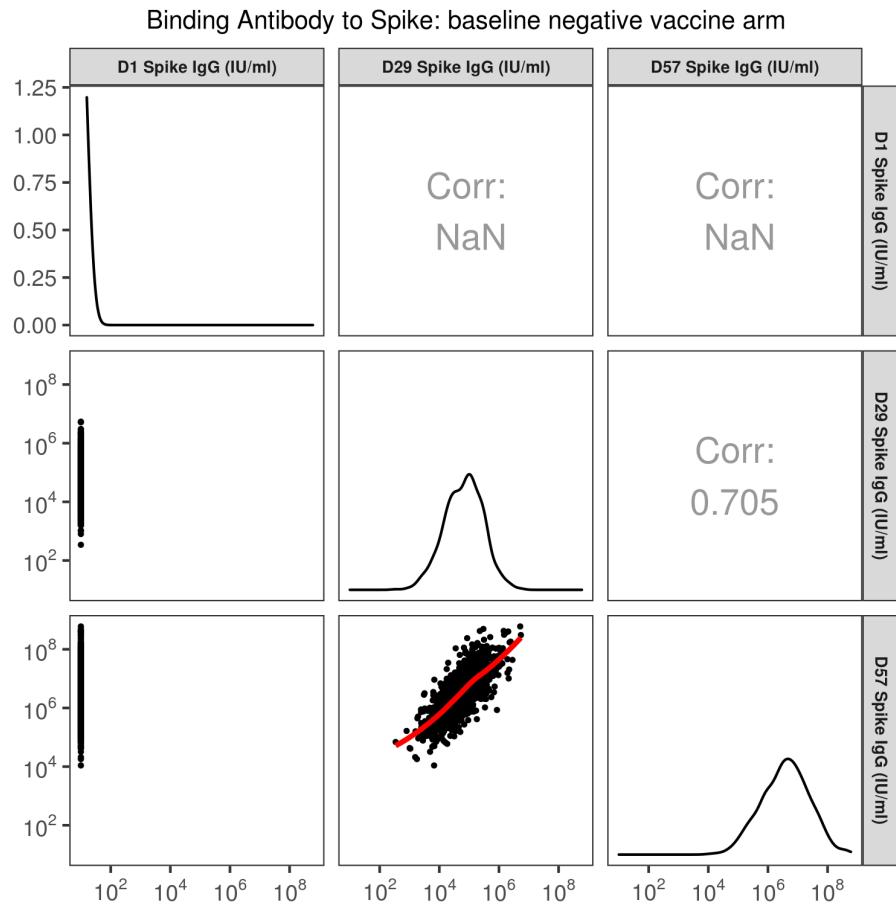


Figure 1.4: (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to Spike: baseline negative vaccine arm

}

\caption{(Mock data) Pair plots of D1, D29 and D57 PsV Neutralization 80% Titer: Baseline negative vaccine arm} \end{figure}

### 1.1.2 Baseline SARS-CoV-2 Positive

\begin{figure}[ht]

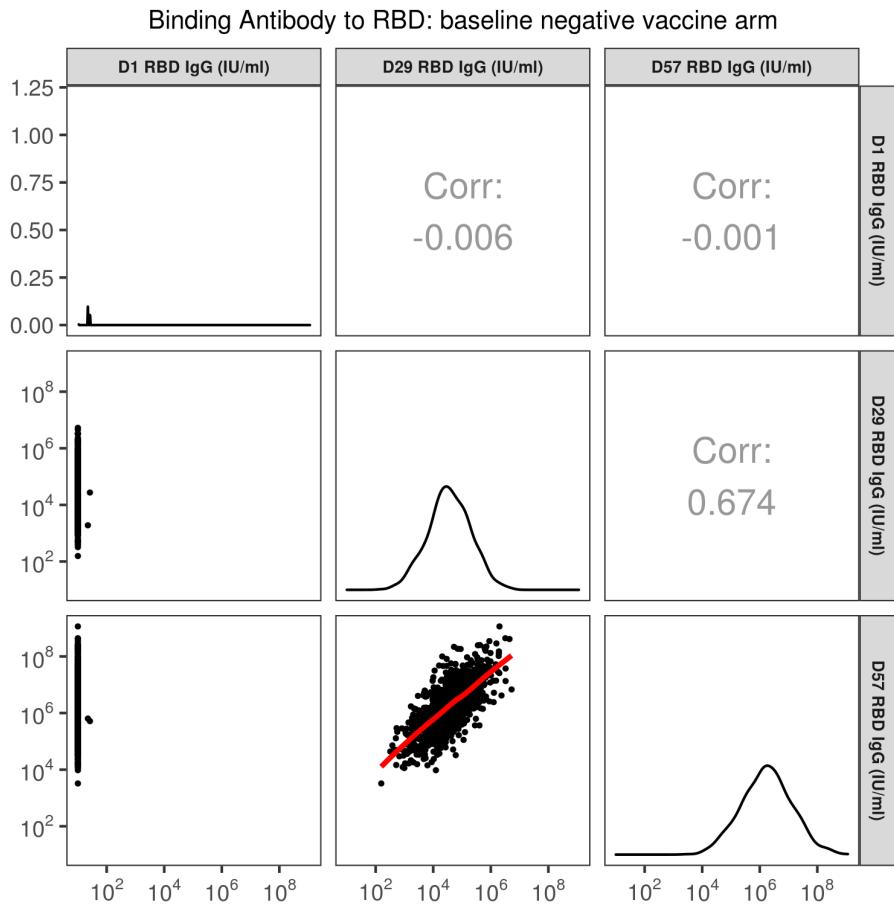
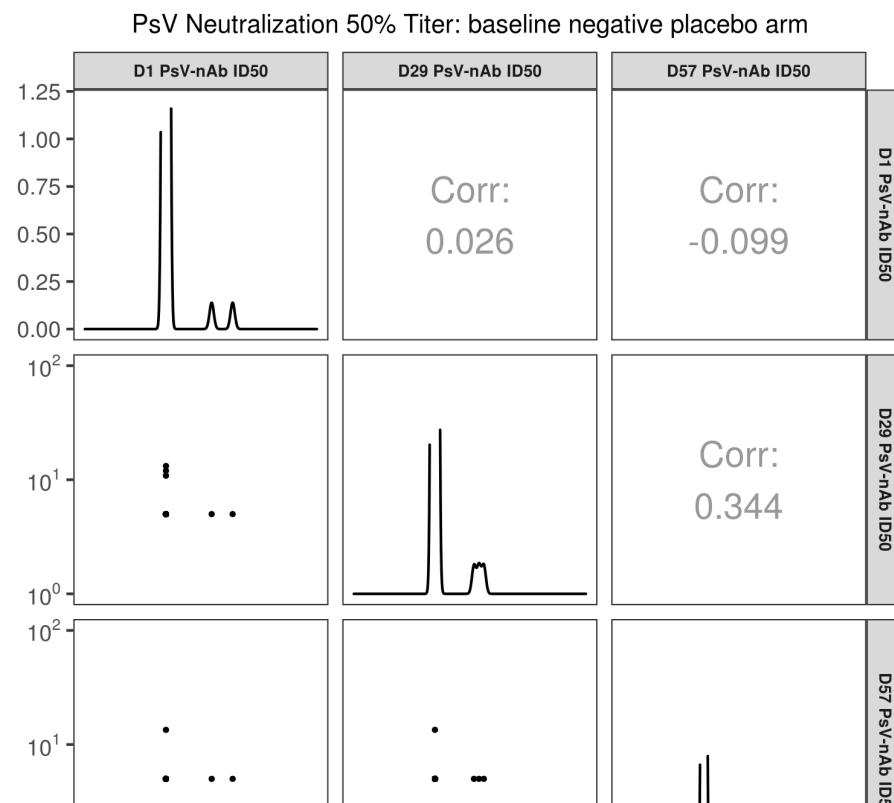


Figure 1.5: (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to RBD: baseline negative vaccine arm



### 1.1. PAIRS PLOTS OF ANTIBODY MARKERS FOR OVERALL PER-PROTOCOL COHORT23

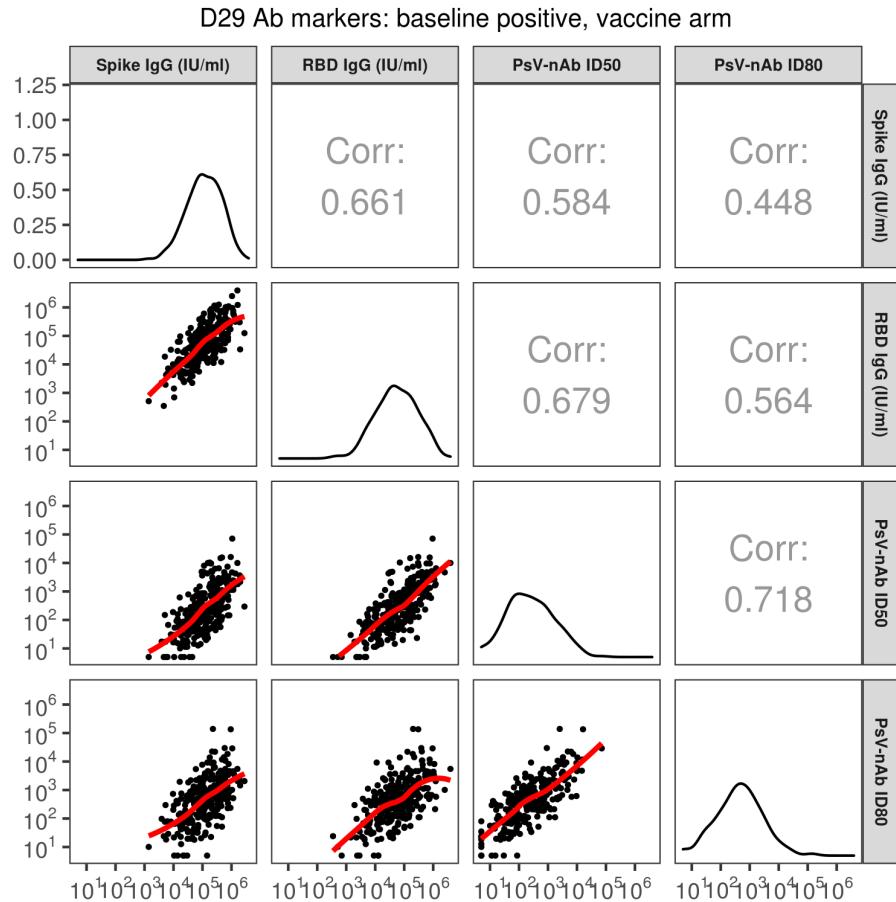


Figure 1.6: (Mock data) Pair plots of D29 Ab markers: baseline positive vaccine arm

}

\caption{(Mock data) Pair plots of D1, D29 and D57 PsV Neutralization 50% Titer: baseline negative placebo arm} \end{figure}

\begin{figure}[ht]

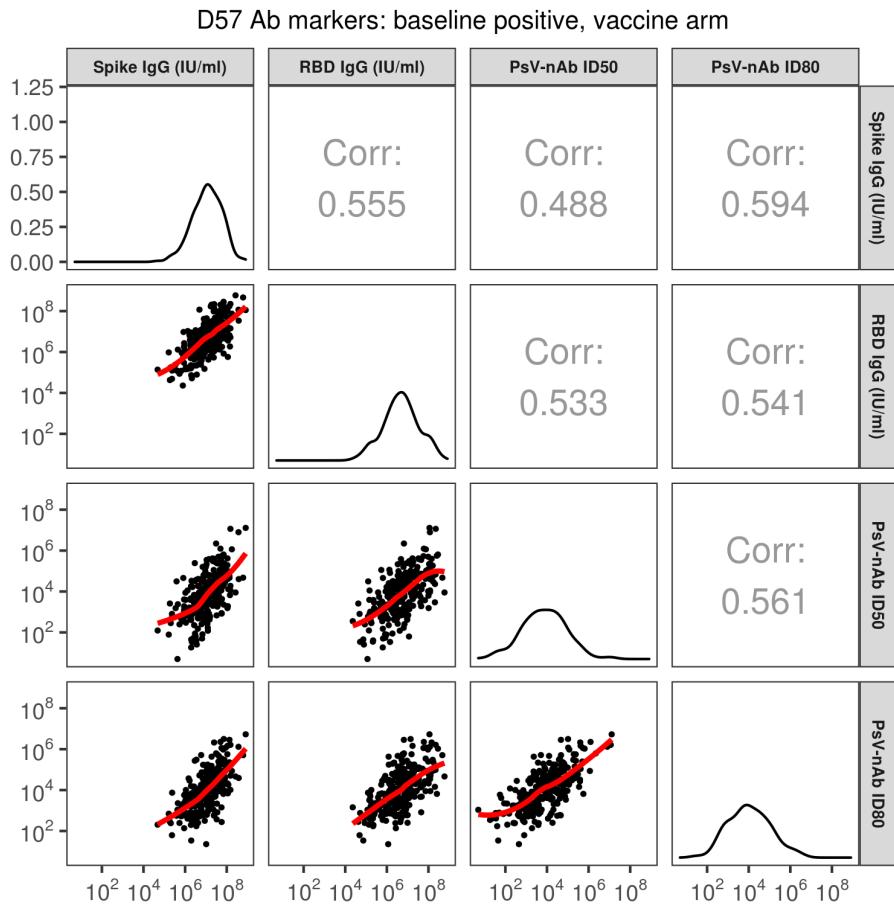
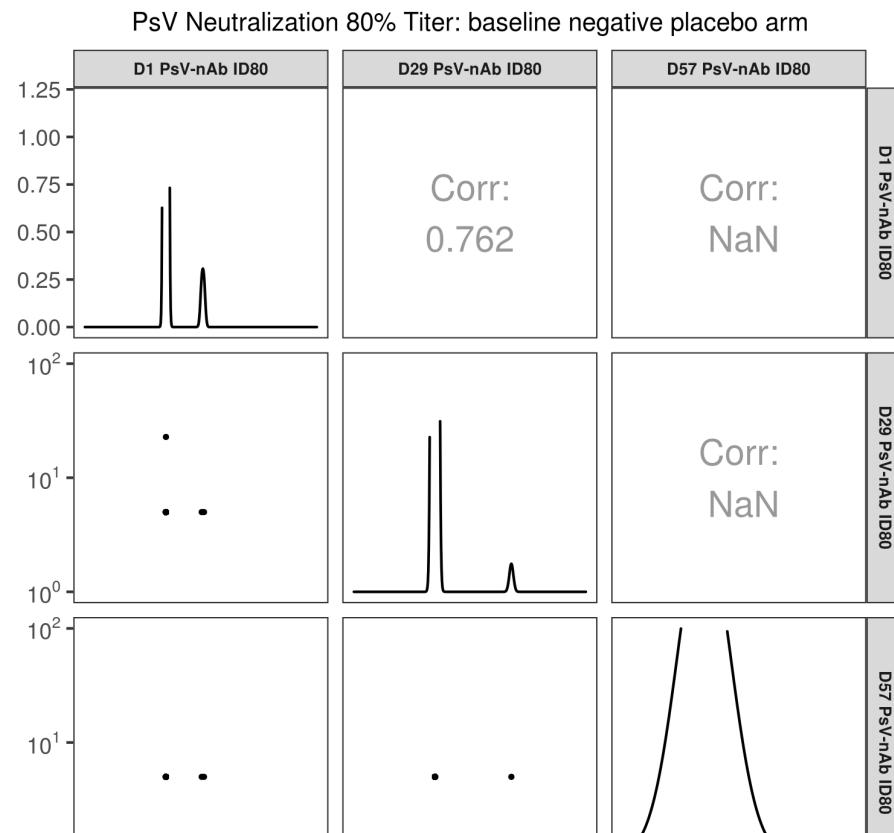


Figure 1.7: (Mock data) Pair plots of D57 Ab markers: baseline positive vaccine arm



## 1.2. RCDF PLOTS OF ANTIBODY MARKERS FOR OVERALL PER-PROTOCOL COHORT25

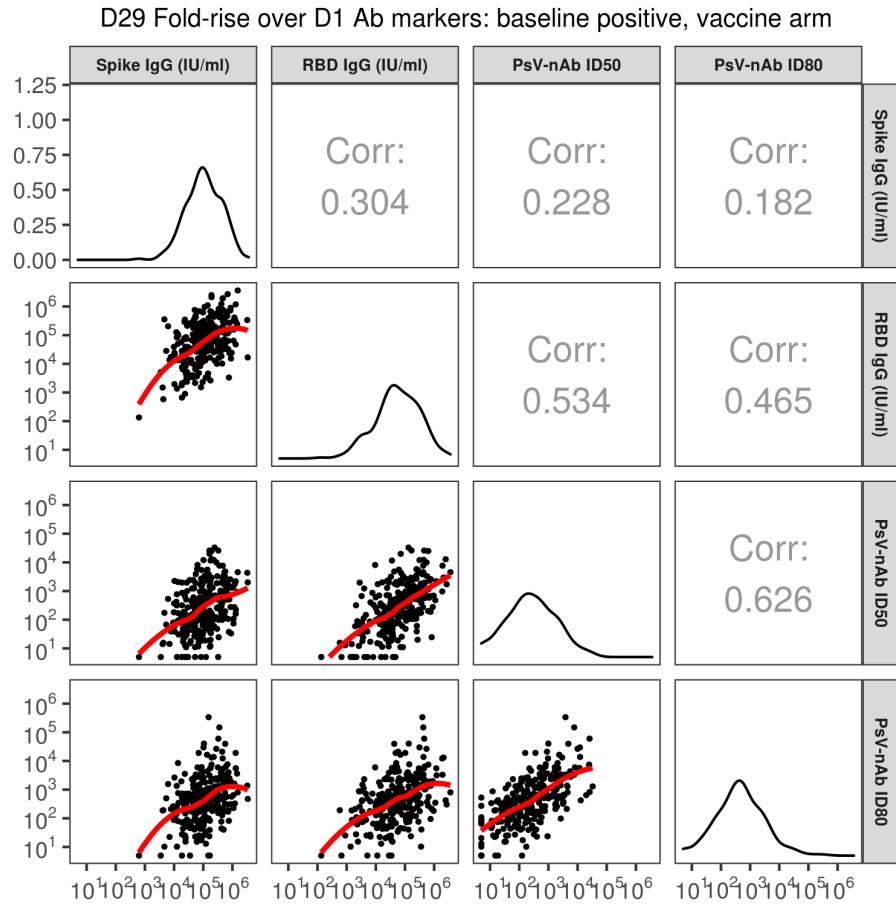


Figure 1.8: (Mock data) Pair plots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm

}

\caption{(Mock data) Pair plots of D1, D29 and D57 PsV Neutralization 80% Titer: Baseline negative placebo arm} \end{figure}

## 1.2 RCDF plots of antibody markers for overall per-protocol cohort

### 1.3 Scatter plots of antibody markers versus age for overall per-protocol cohort

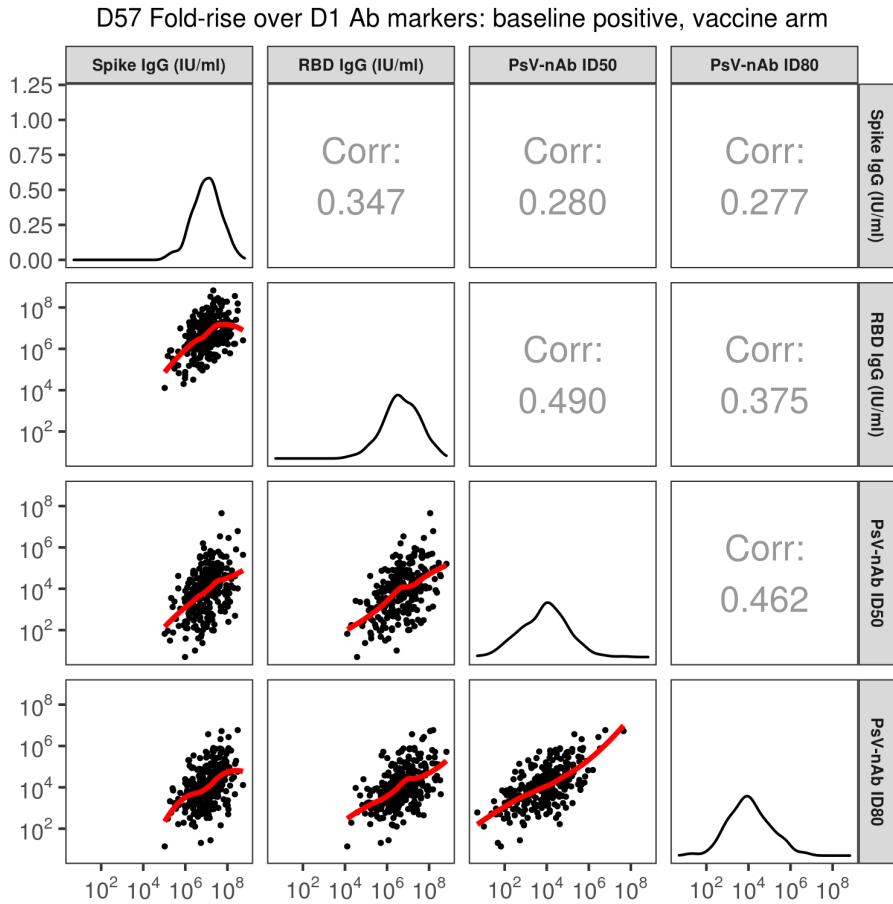


Figure 1.9: (Mock data) Pair plots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm

### 1.3.1 Baseline SARS-CoV-2 negative

### 1.3.2 Baseline SARS-CoV-2 positive

## 1.4 Box plots of antibody markers for overall per-protocol cohort

### 1.4.1 Baseline SARS-CoV-2 negative

### 1.4.2 Baseline SARS-CoV-2 positive

### 1.4.3 Baseline negative vs. positive vaccine recipients

## 1.5. SPAGHETTI PLOTS OF ANTIBODY MARKERS OVER TIME FOR THE OVERALL PER-PROTOCOL COHORT2

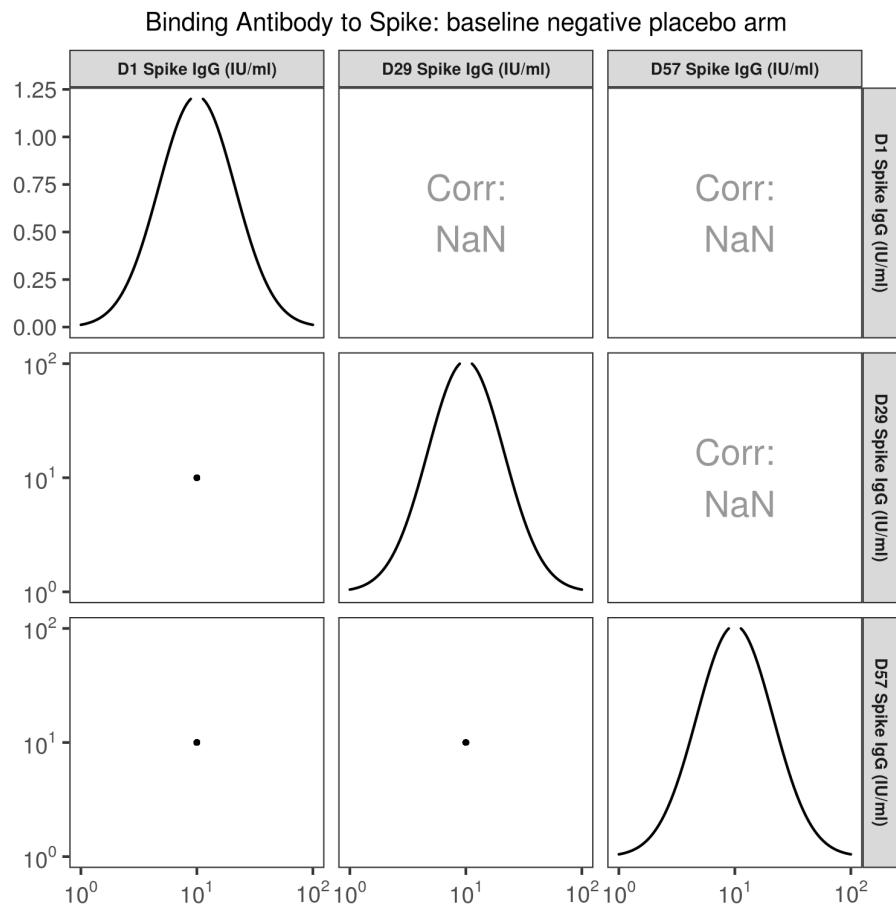


Figure 1.10: (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to Spike: baseline negative placebo arm

### 1.4.4 Baseline negative vs. positive placebo recipients

## 1.5 Spaghetti plots of antibody markers over time for the overall per-protocol cohort

### 1.5.1 Baseline SARS-CoV-2 negative

### 1.5.2 Baseline SARS-CoV-2 positive

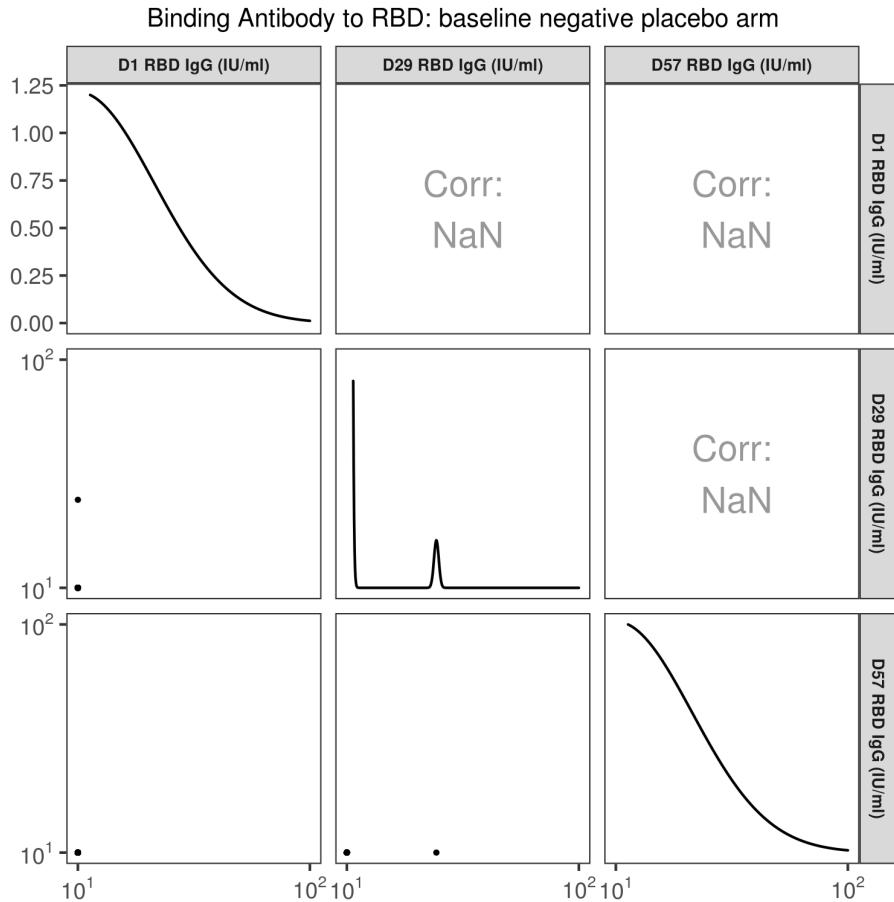


Figure 1.11: (Mock data) Pair plots of D1, D29 and D57 Binding Antibody to RBD: baseline negative placebo arm

## 1.6 RCDF plots of antibody markers by demographics for per-protocol cohort

### 1.6.1 Baseline SARS-CoV-2 negative

### 1.6.2 Baseline SARS-CoV-2 positive

## 1.7 Boxplots of antibody markers by demographics for per-protocol cohort

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT29

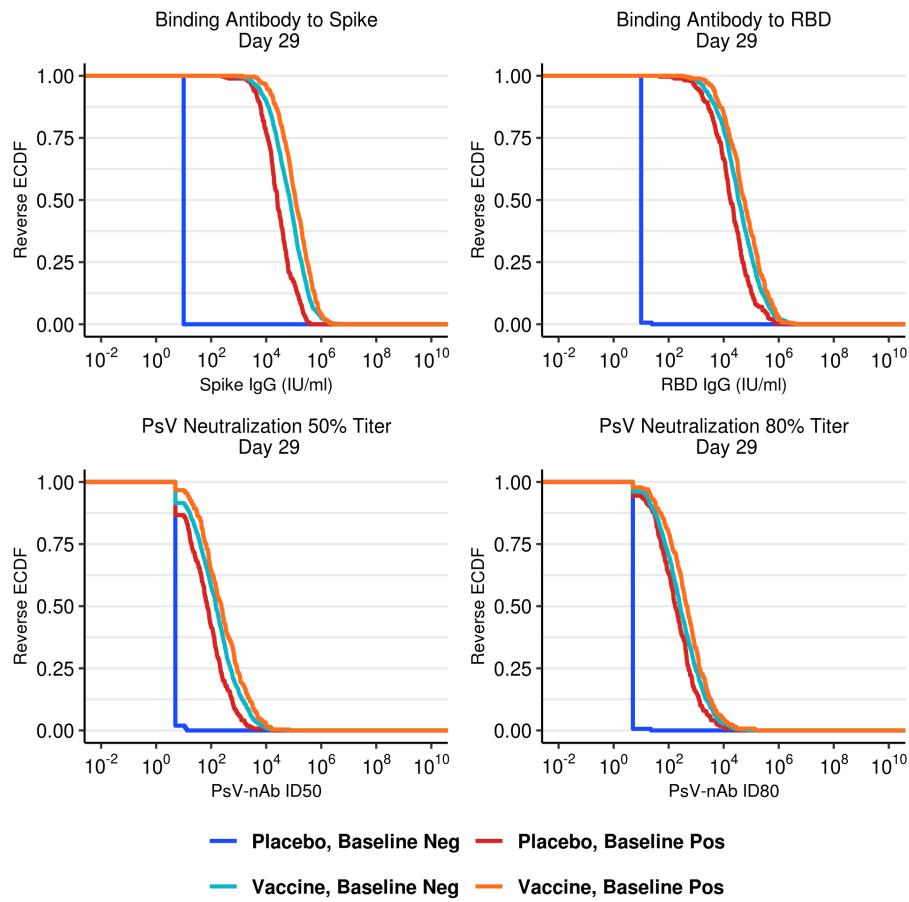


Figure 1.12: (Mock data) RCDF plots for D29 Ab markers: by baseline status x randomization arm

### 1.7.1 Baseline SARS-CoV-2 negative

### 1.7.2 Baseline SARS-CoV-2 positive

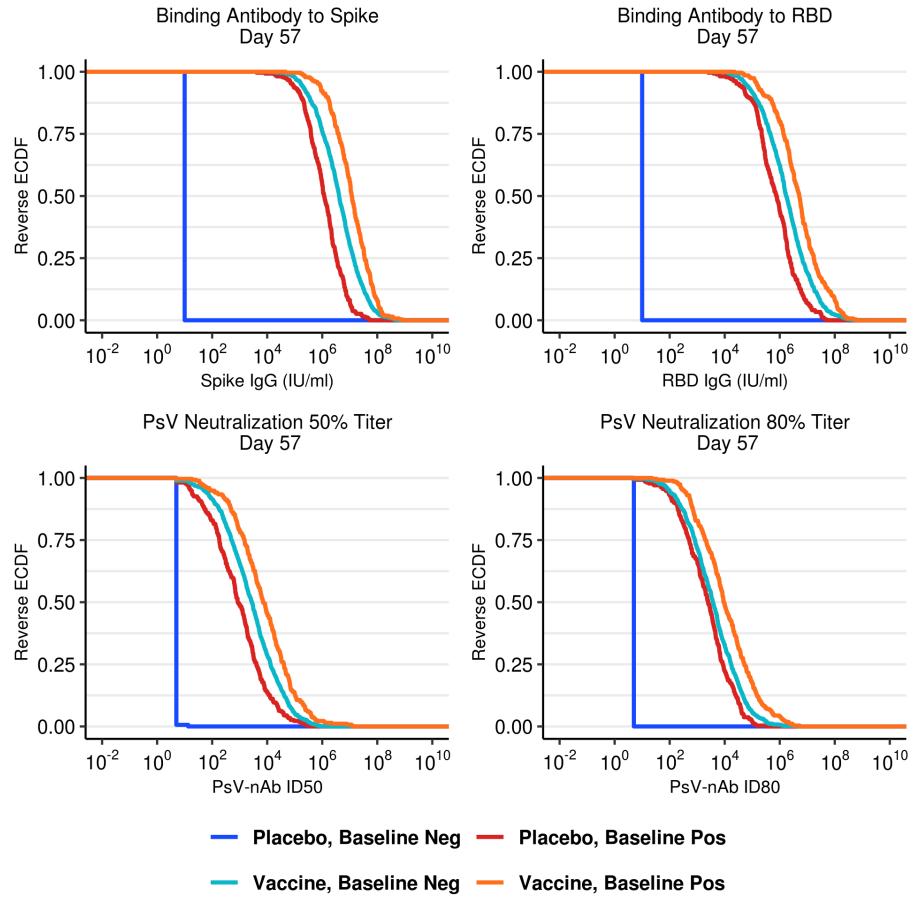


Figure 1.13: (Mock data) RCDF plots for D57 Ab markers: by baseline status x randomization arm

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT31

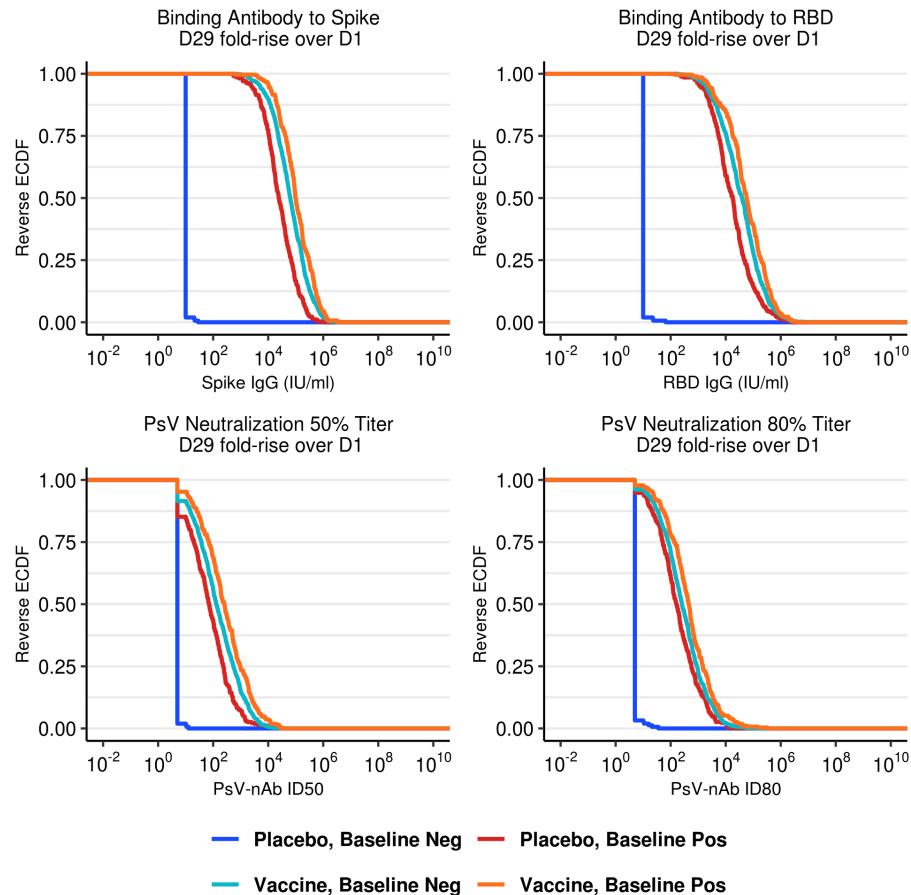


Figure 1.14: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: by baseline status x randomization arm

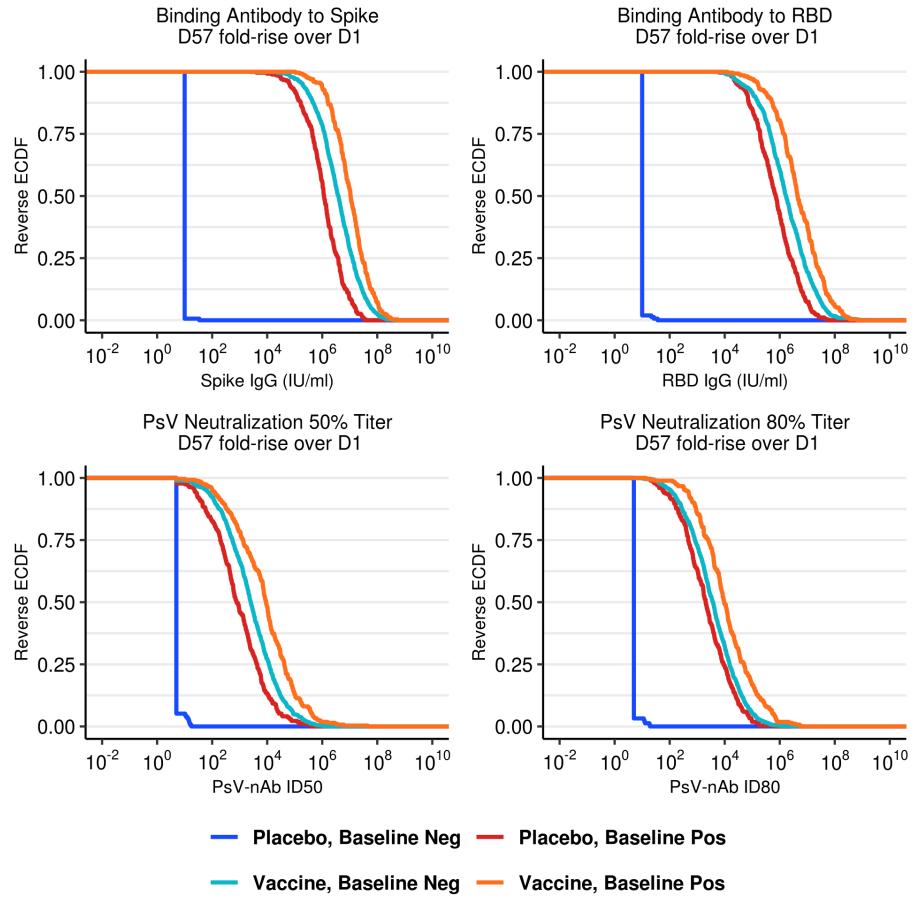


Figure 1.15: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: by baseline status x randomization arm

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT33

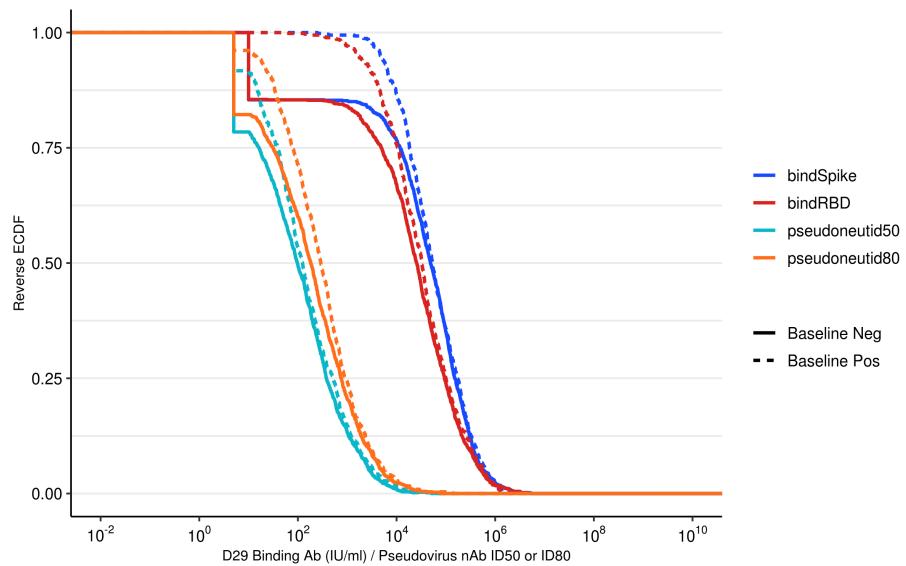


Figure 1.16: (Mock data) RCDF plots for D29 Ab markers: by baseline status for the vaccine arm

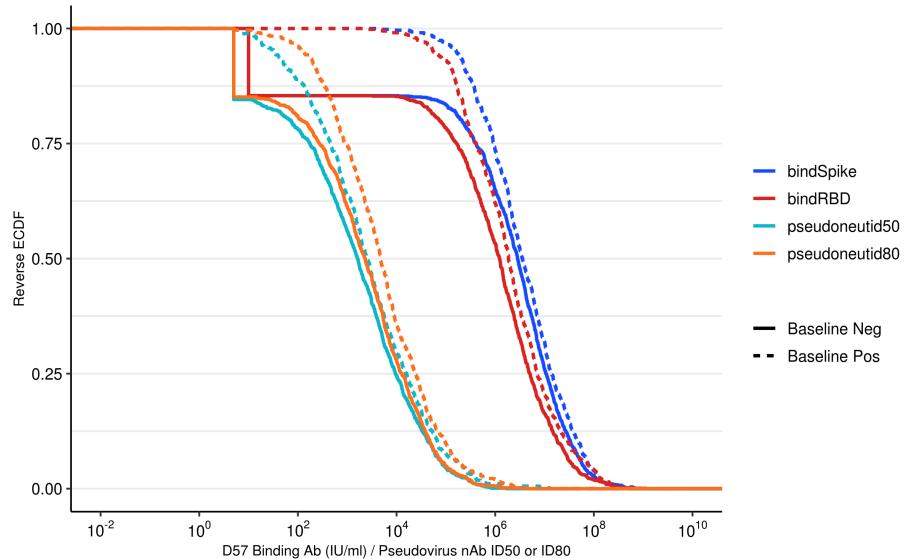


Figure 1.17: (Mock data) RCDF plots for D57 Ab markers: by baseline status for the vaccine arm

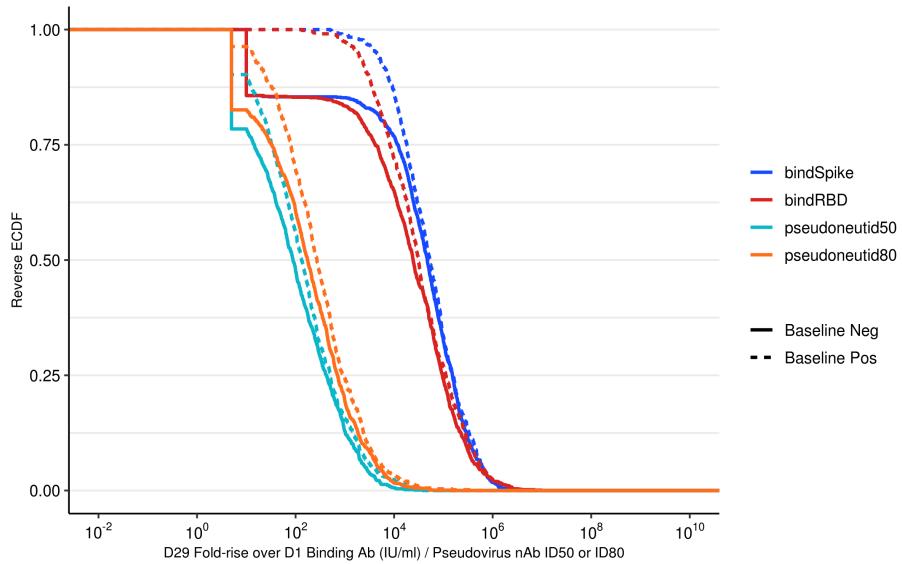


Figure 1.18: (Mock data) RCDF plots for D29 over D1 fold-rise Ab markers: by baseline status for the vaccine arm

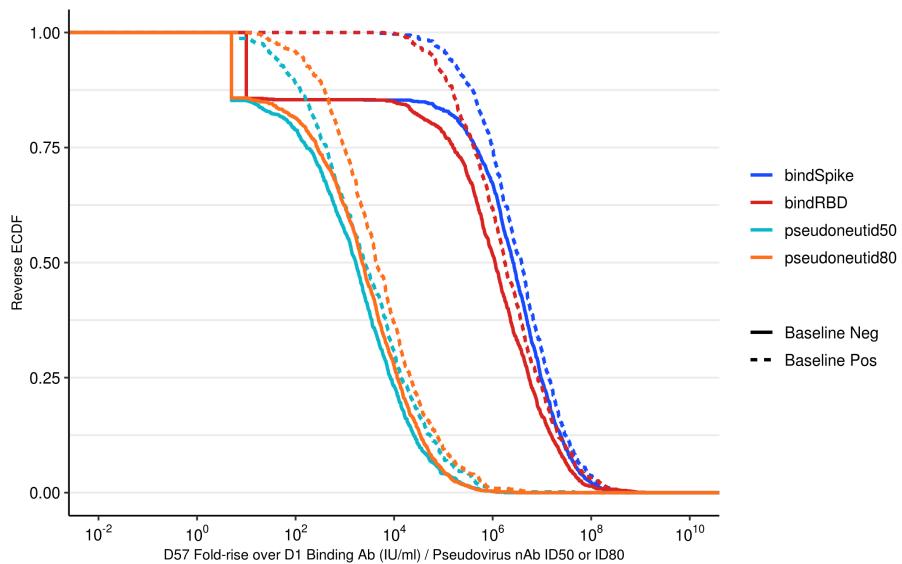


Figure 1.19: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: by baseline status for the vaccine arm

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT35

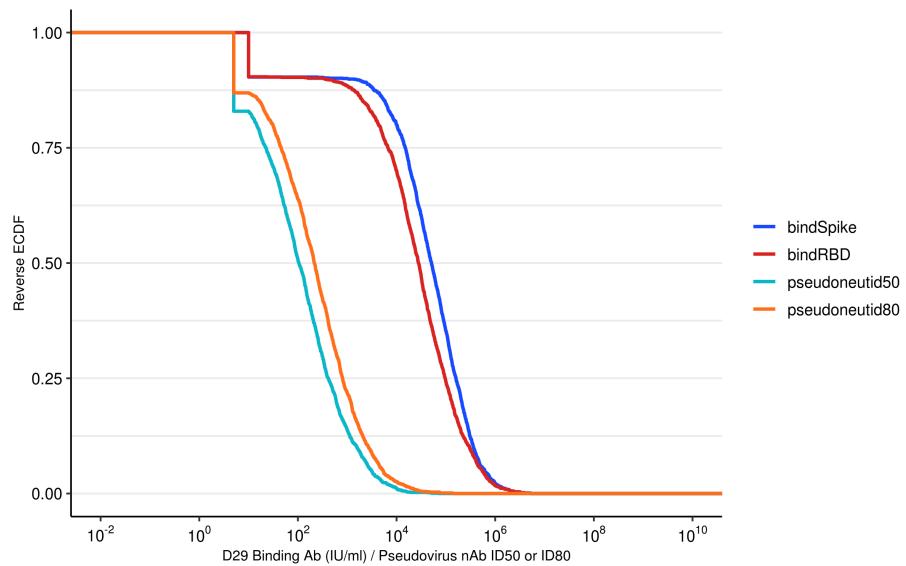


Figure 1.20: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm

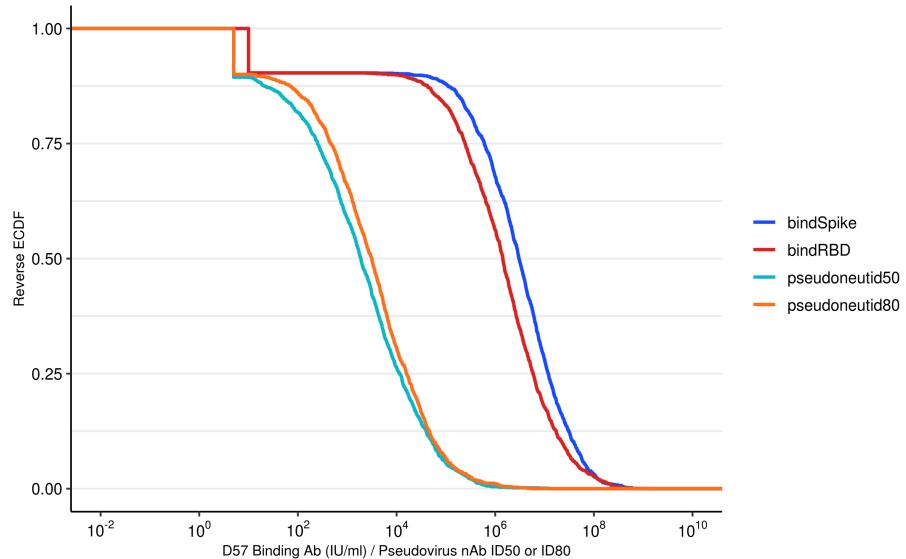


Figure 1.21: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm

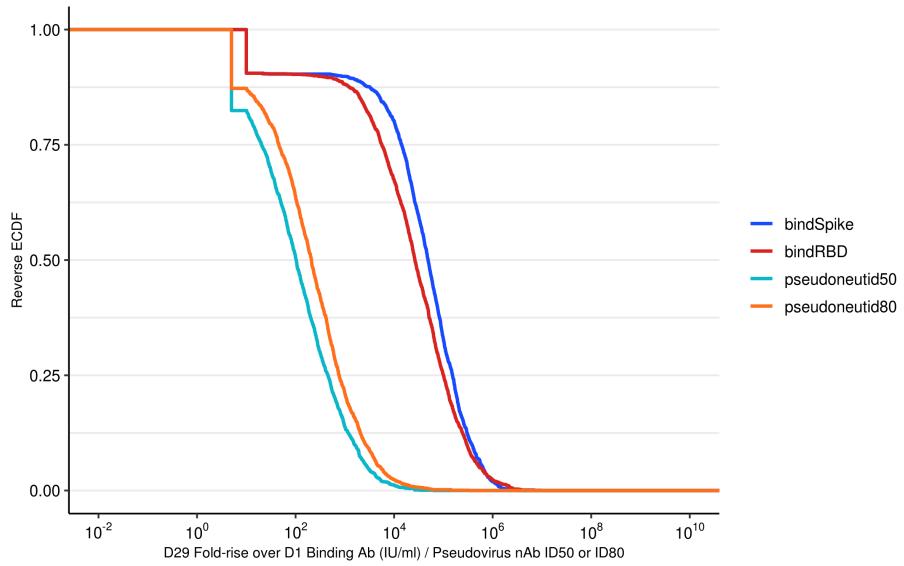


Figure 1.22: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm

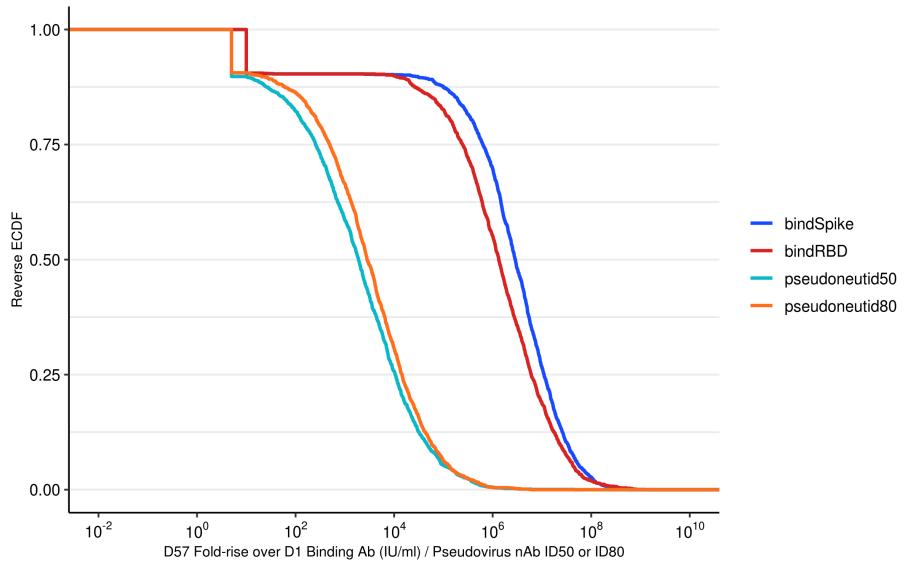


Figure 1.23: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT37

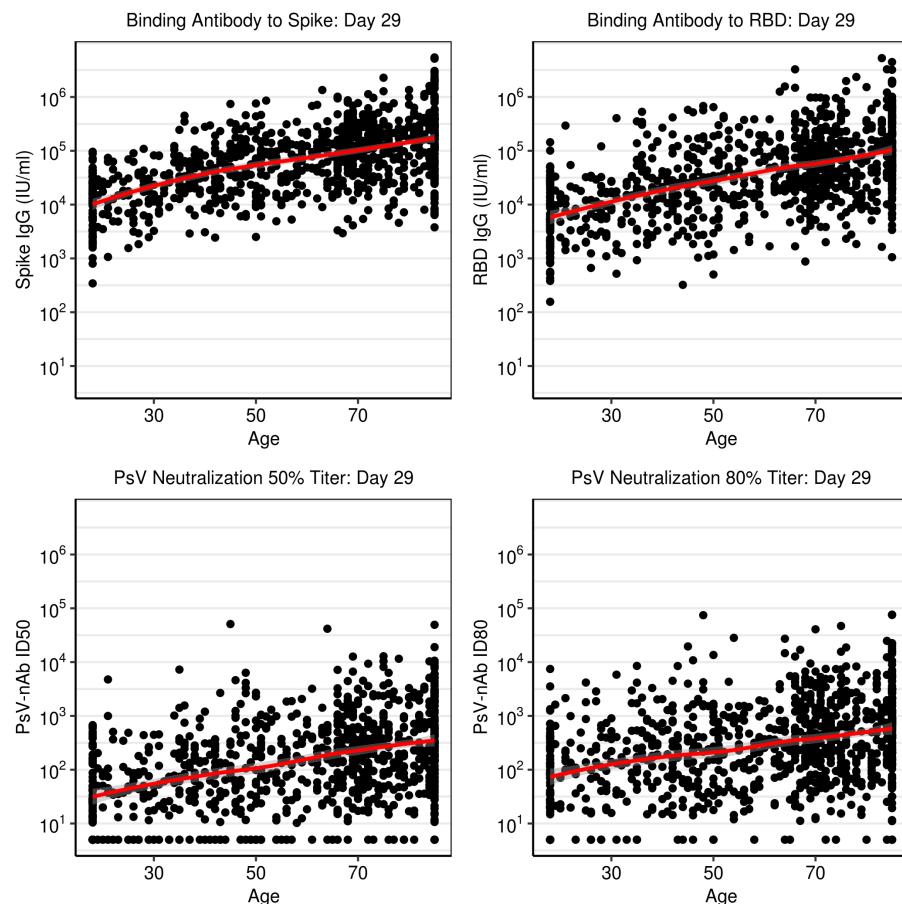


Figure 1.24: (Mock data) Scatter plots for D29 Ab markers vs. age: baseline negative vaccine arm

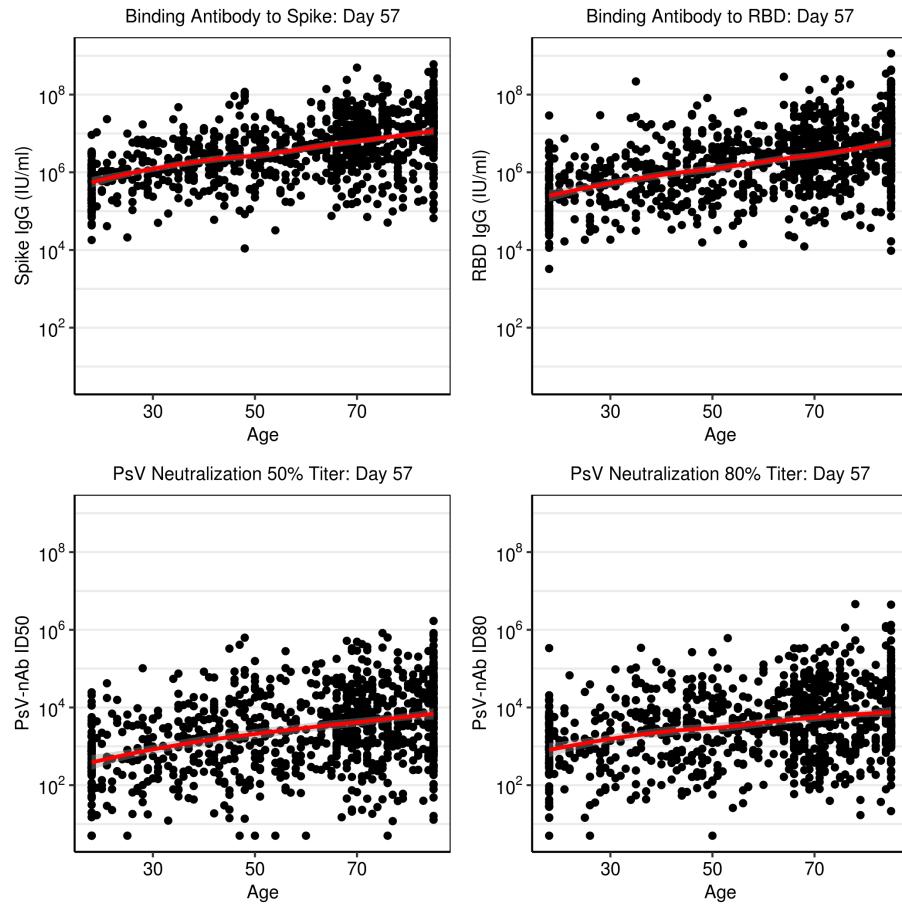


Figure 1.25: (Mock data) Scatter plots for D57 Ab markers vs. age: baseline negative vaccine arm

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT39

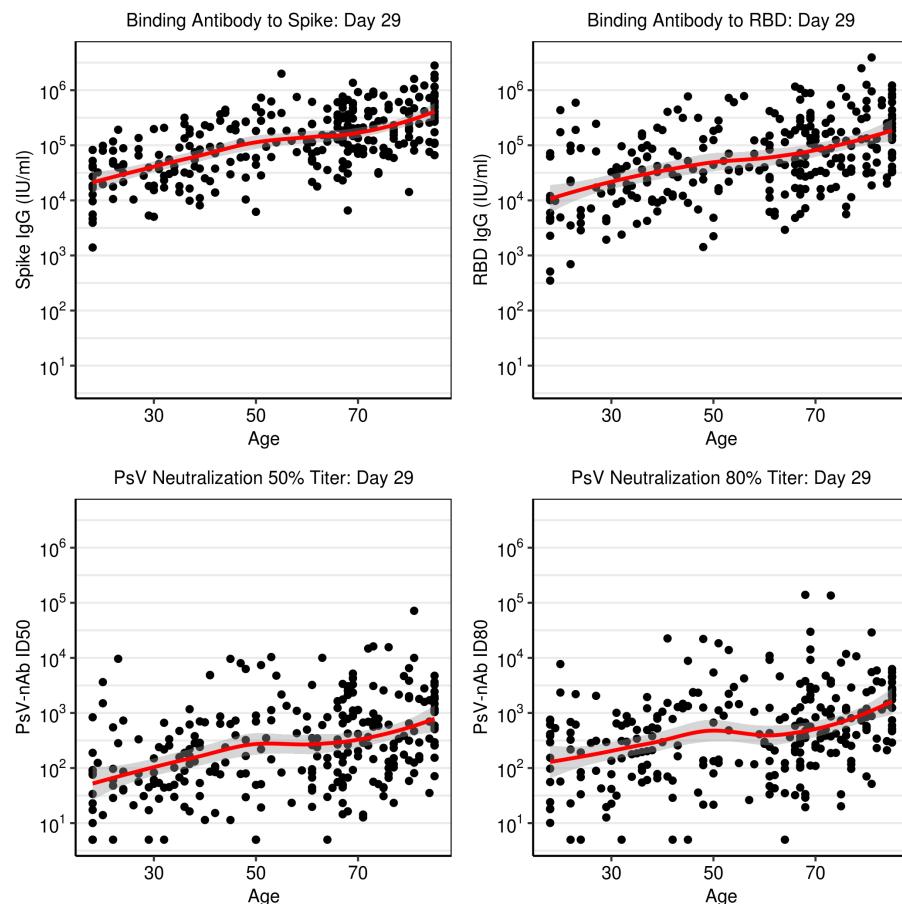


Figure 1.26: (Mock data) Scatter plots for D29 Ab markers vs. age: baseline positive vaccine arm

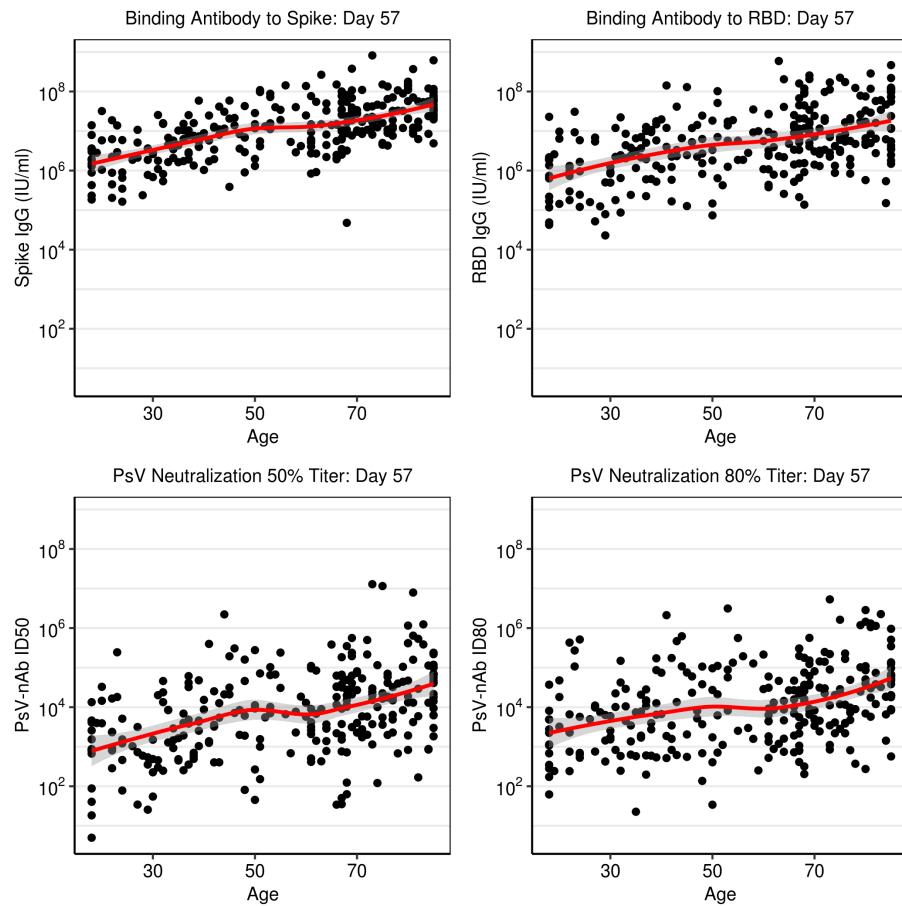


Figure 1.27: (Mock data) Scatter plots for D57 Ab markers vs. age: baseline positive vaccine arm

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT41

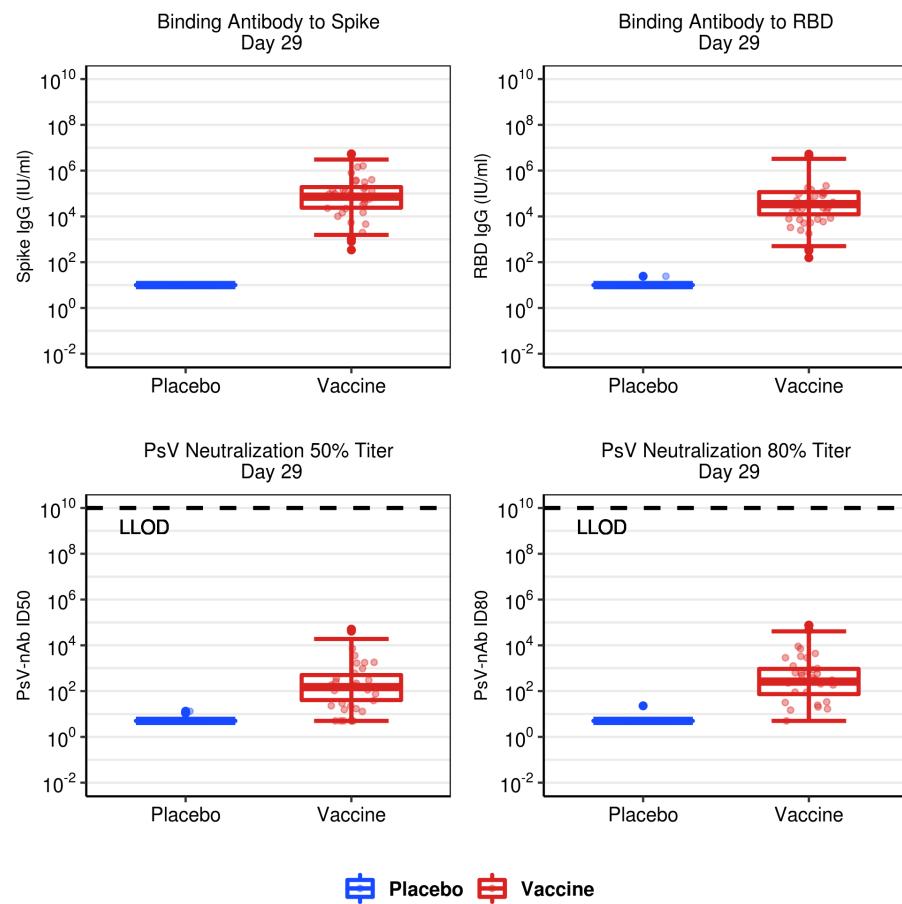


Figure 1.28: (Mock data) Boxplots of D29 Ab markers: baseline negative vaccine + placebo arms

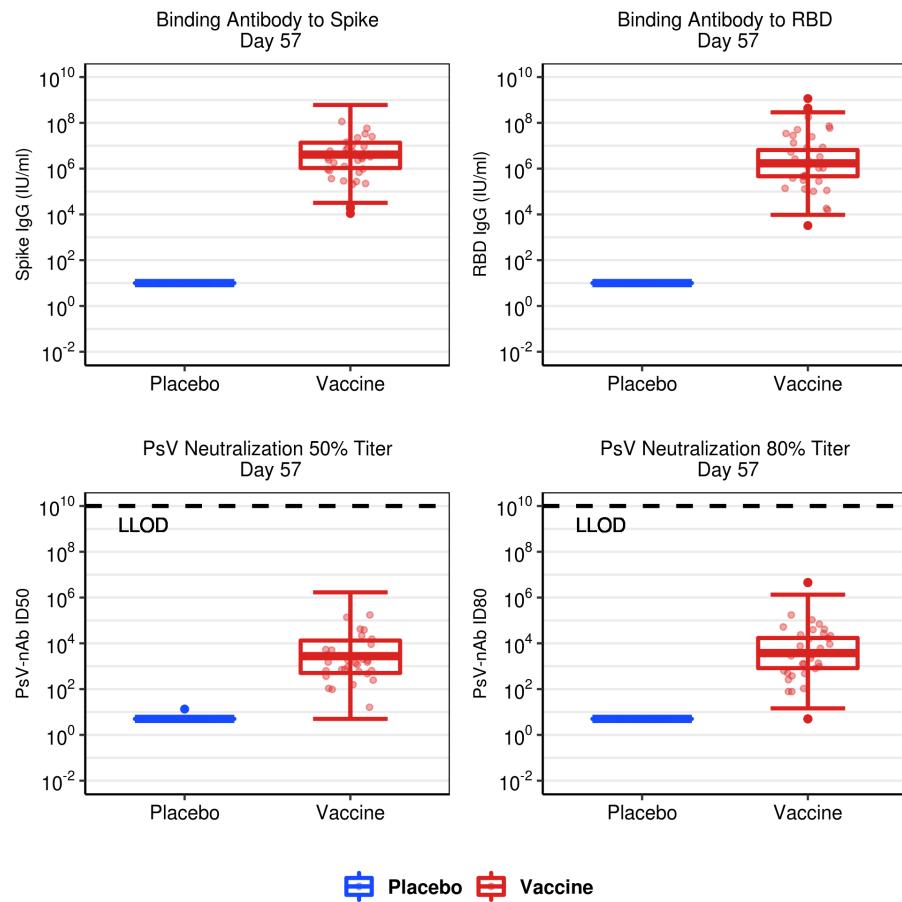


Figure 1.29: (Mock data) Boxplots of D57 Ab markers: baseline negative vaccine + placebo arms

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT43

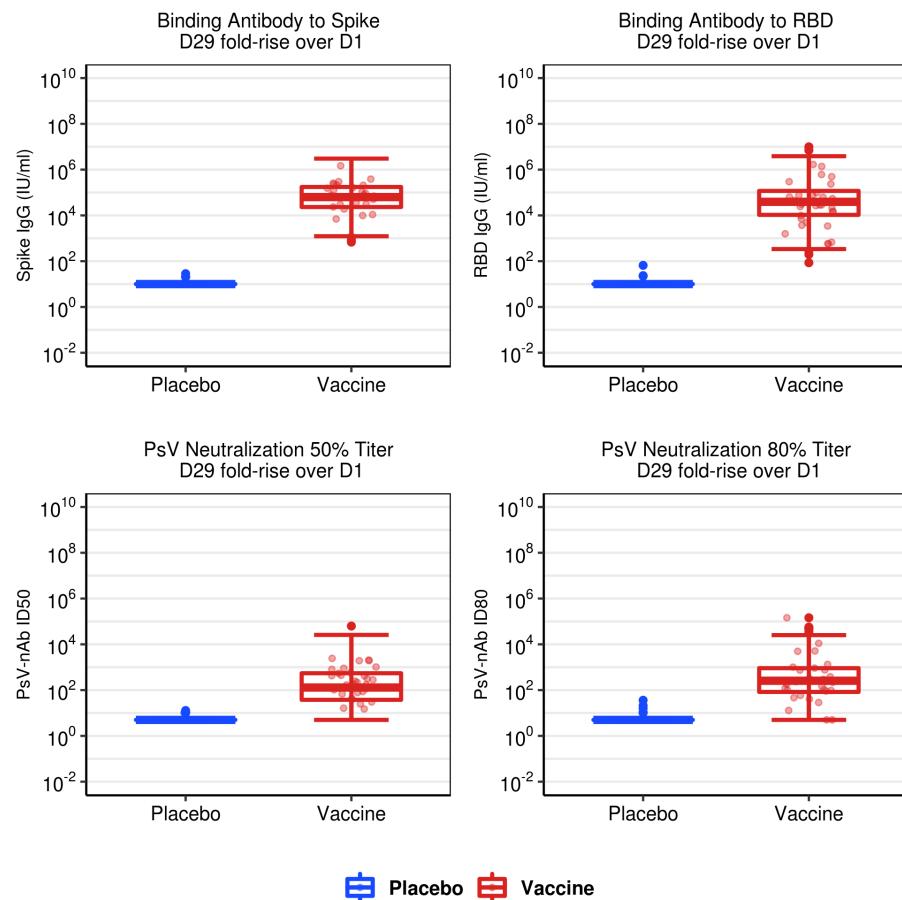


Figure 1.30: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline negative vaccine + placebo arms

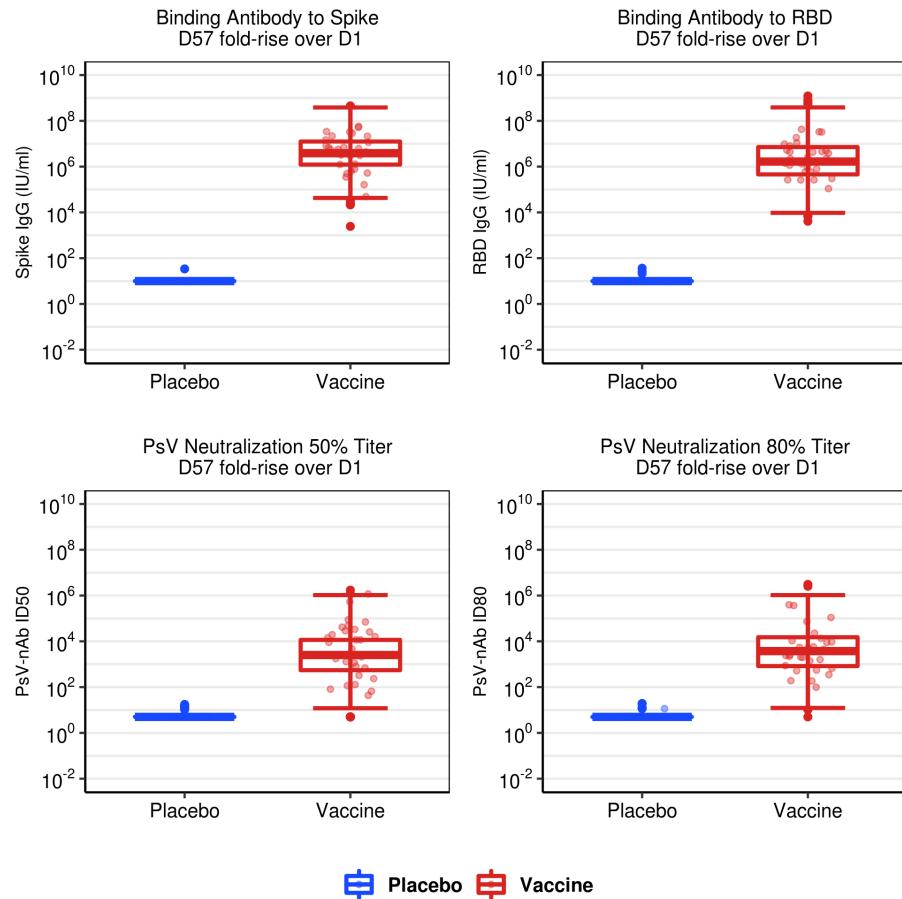


Figure 1.31: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline negative vaccine + placebo arms

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT45

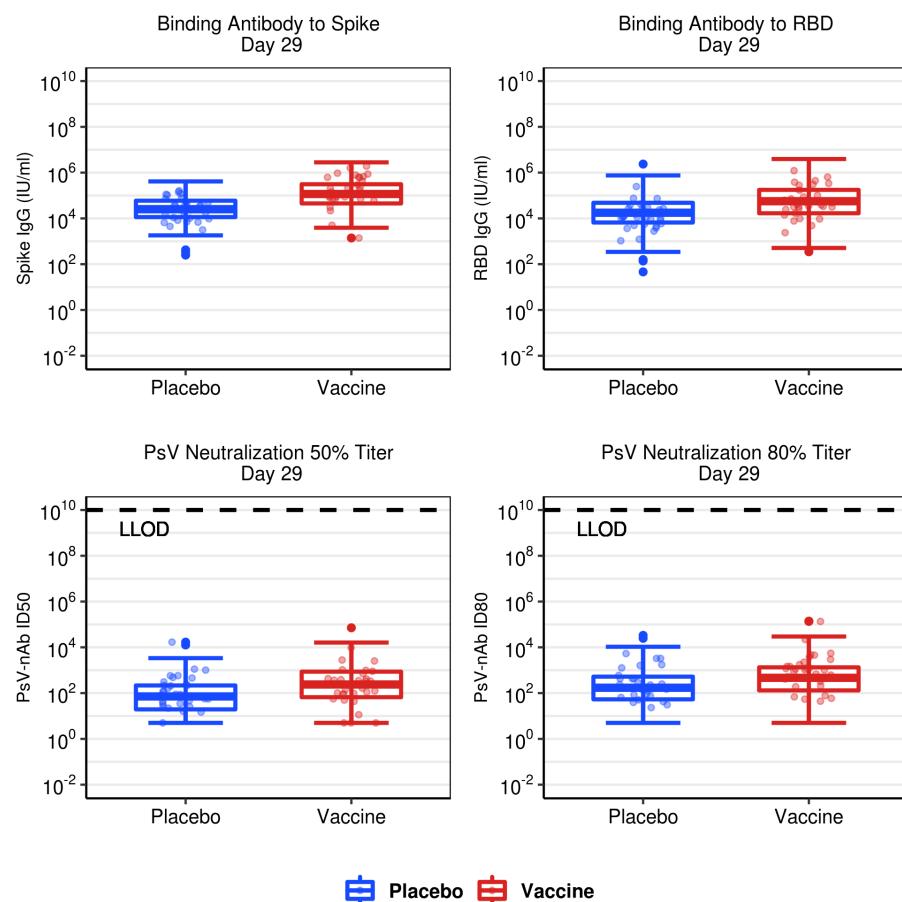


Figure 1.32: (Mock data) Boxplots of D29 Ab markers: baseline positive vaccine + placebo arms

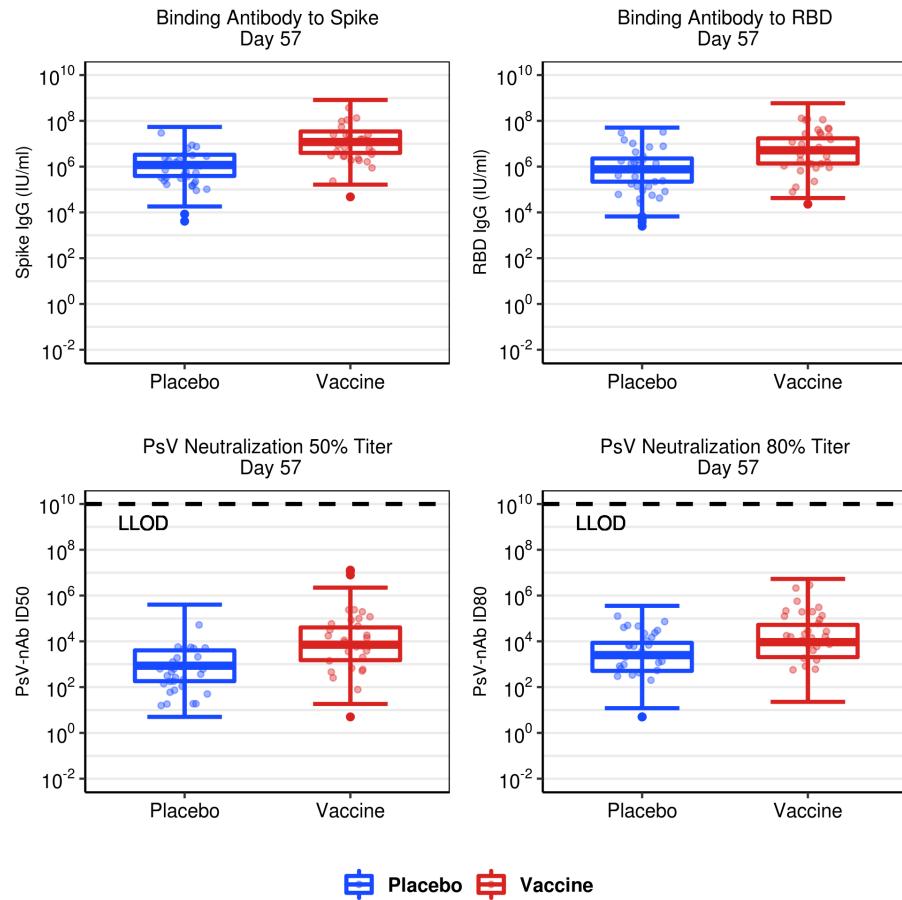


Figure 1.33: (Mock data) Boxplots of D57 Ab markers: baseline positive vaccine + placebo arms

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT47

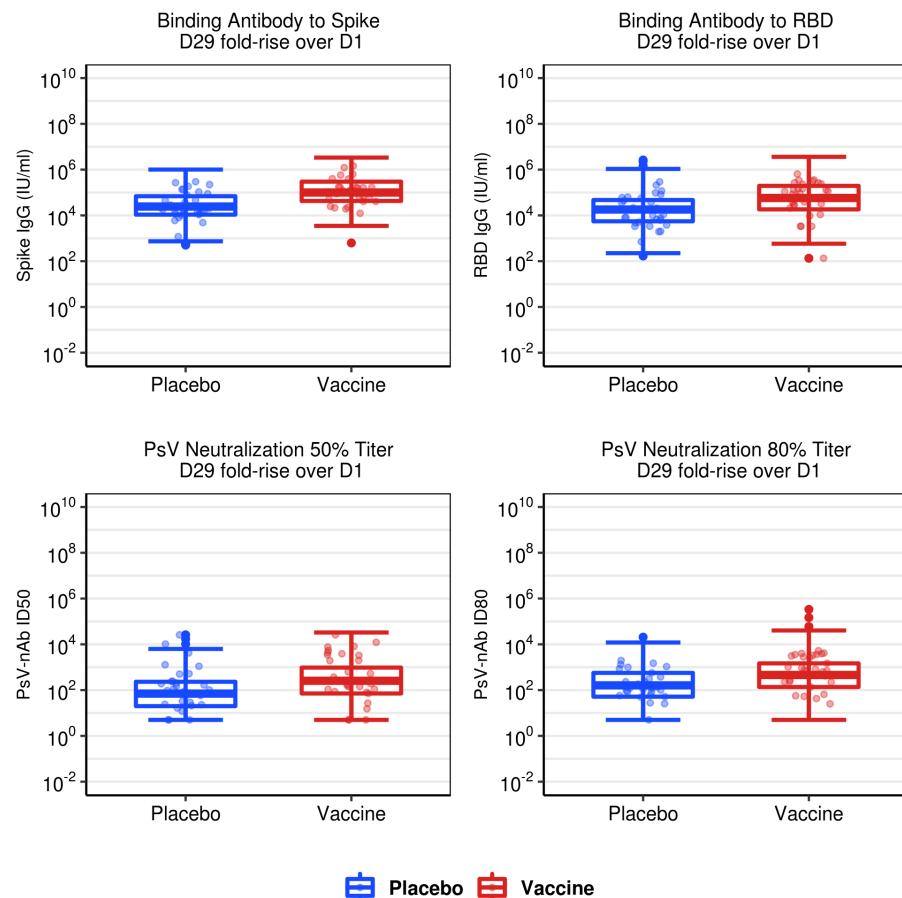


Figure 1.34: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine + placebo arms

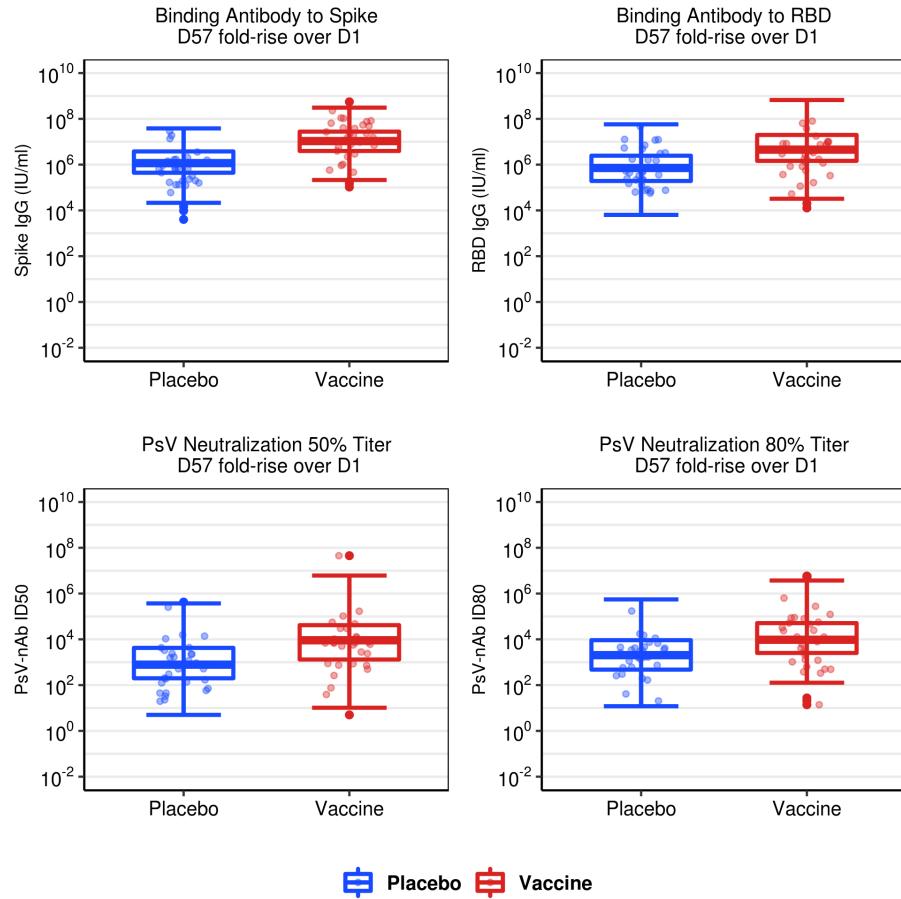


Figure 1.35: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine + placebo arms

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT49

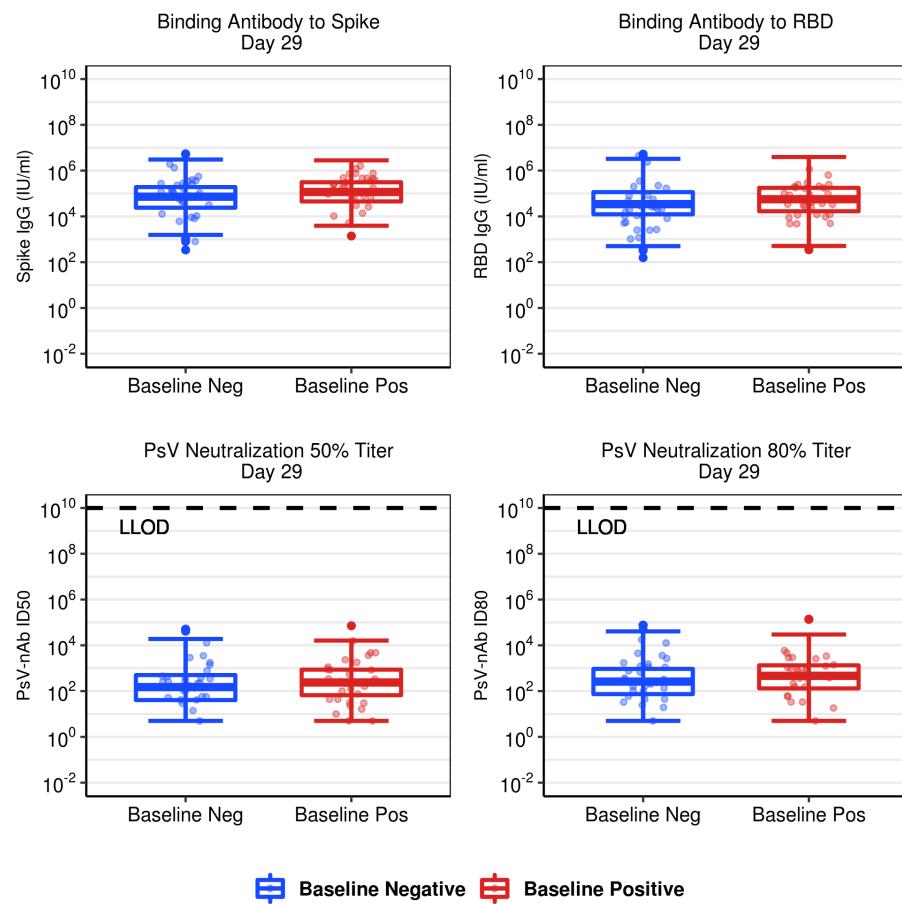


Figure 1.36: (Mock data) Boxplots of D29 Ab markers: baseline positive + negative vaccine arm

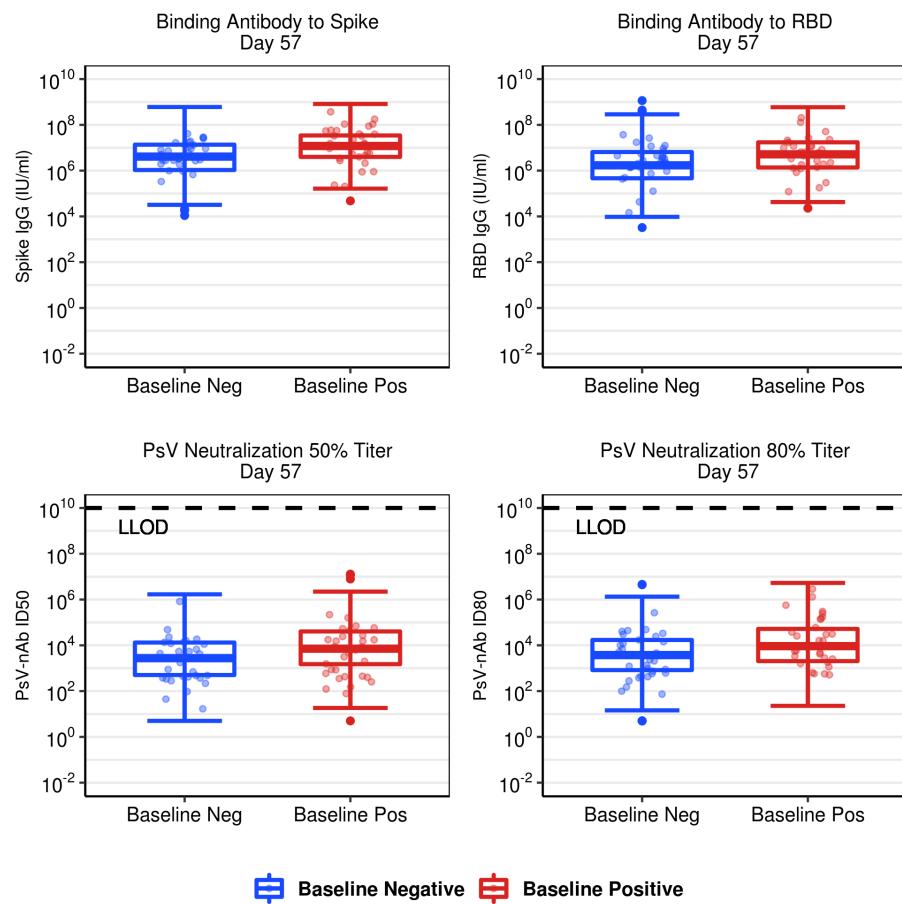


Figure 1.37: (Mock data) Boxplots of D57 Ab markers: baseline positive + negative vaccine arm

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT51

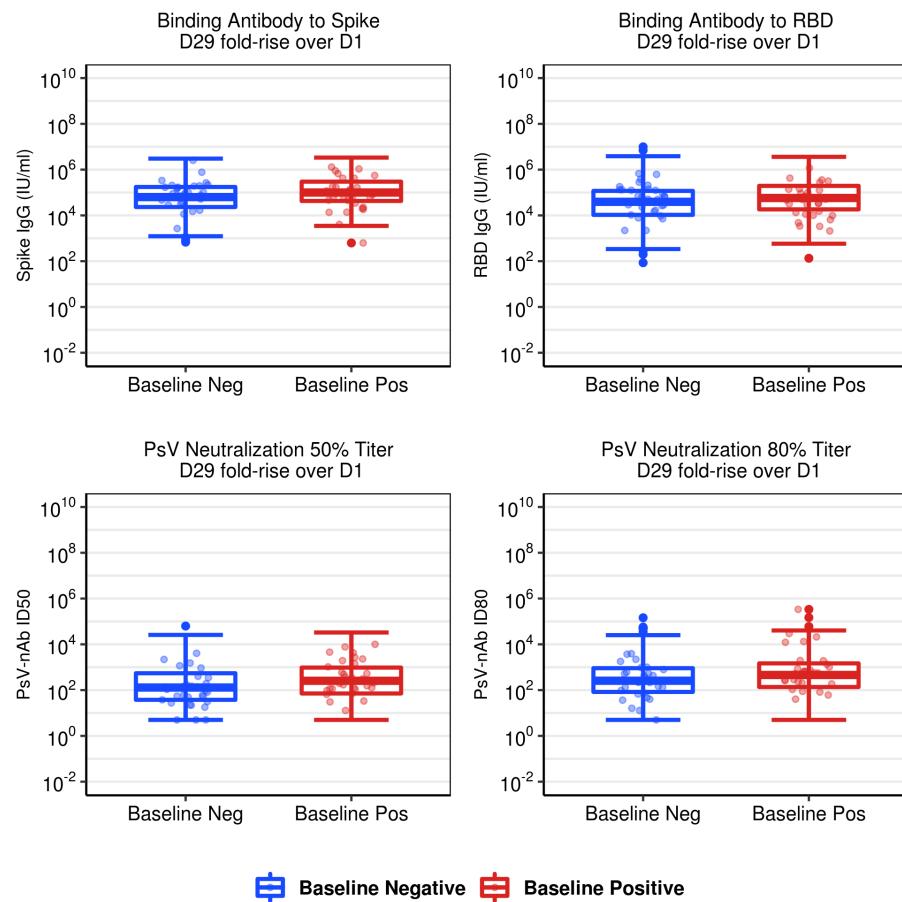


Figure 1.38: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive + negative vaccine arm

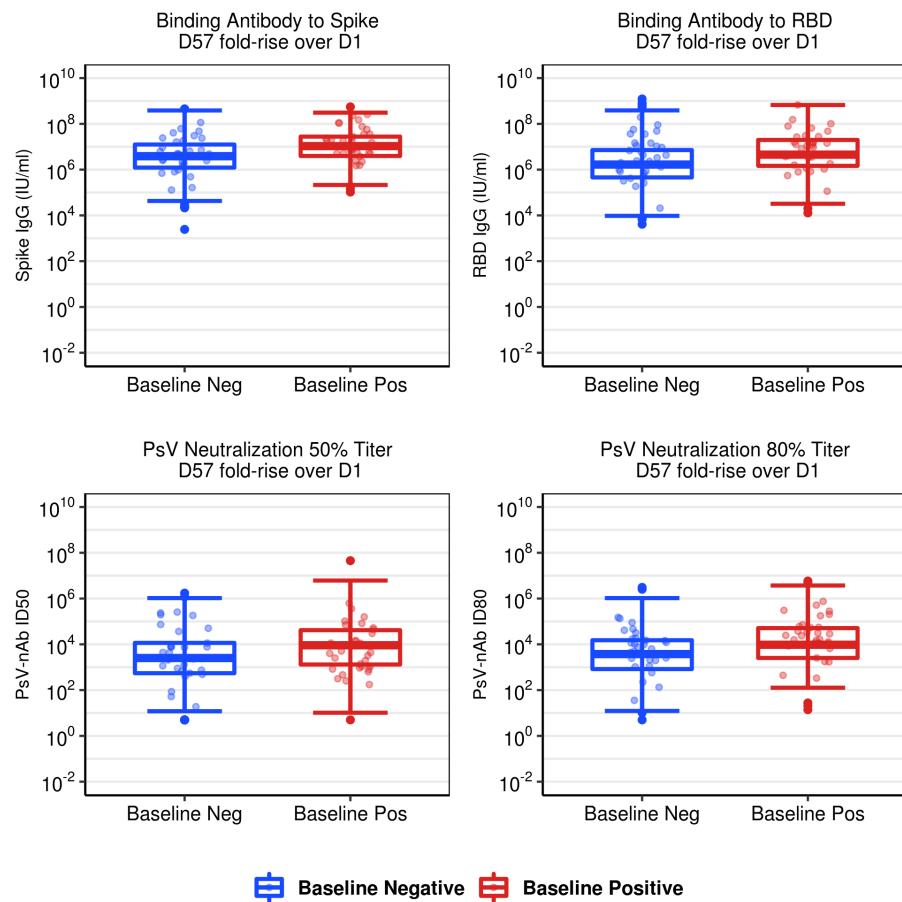


Figure 1.39: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive + negative vaccine arm

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT53

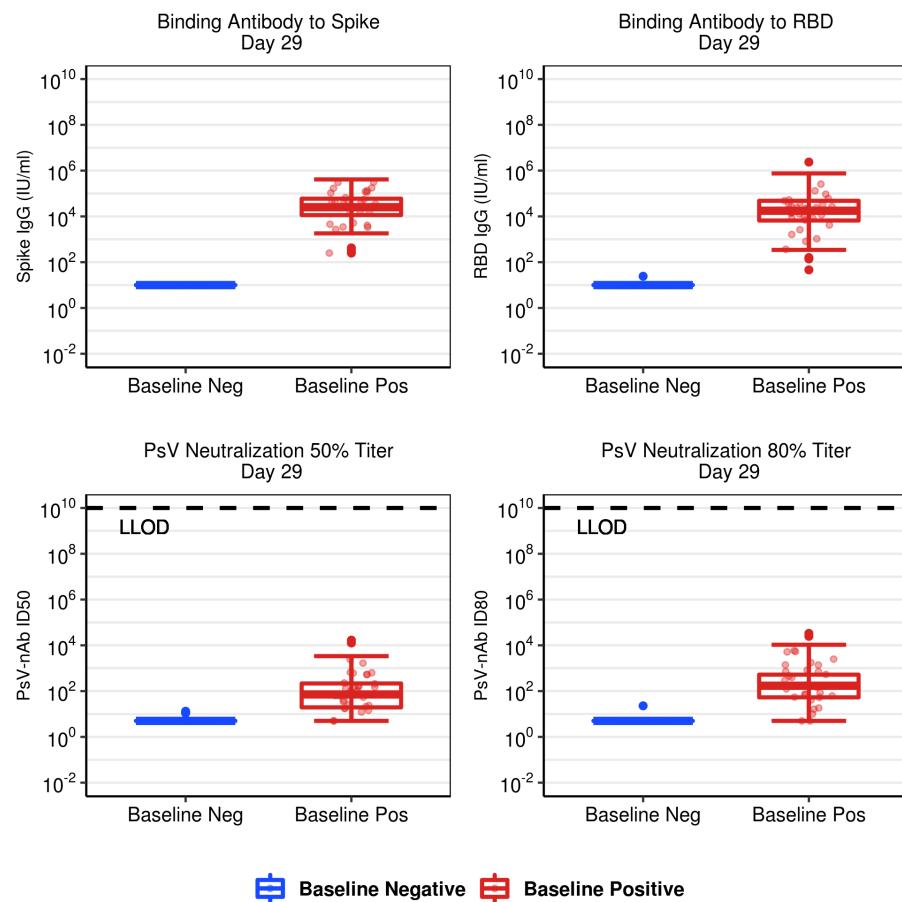


Figure 1.40: (Mock data) Boxplots of D29 Ab markers: baseline positive + negative placebo arm

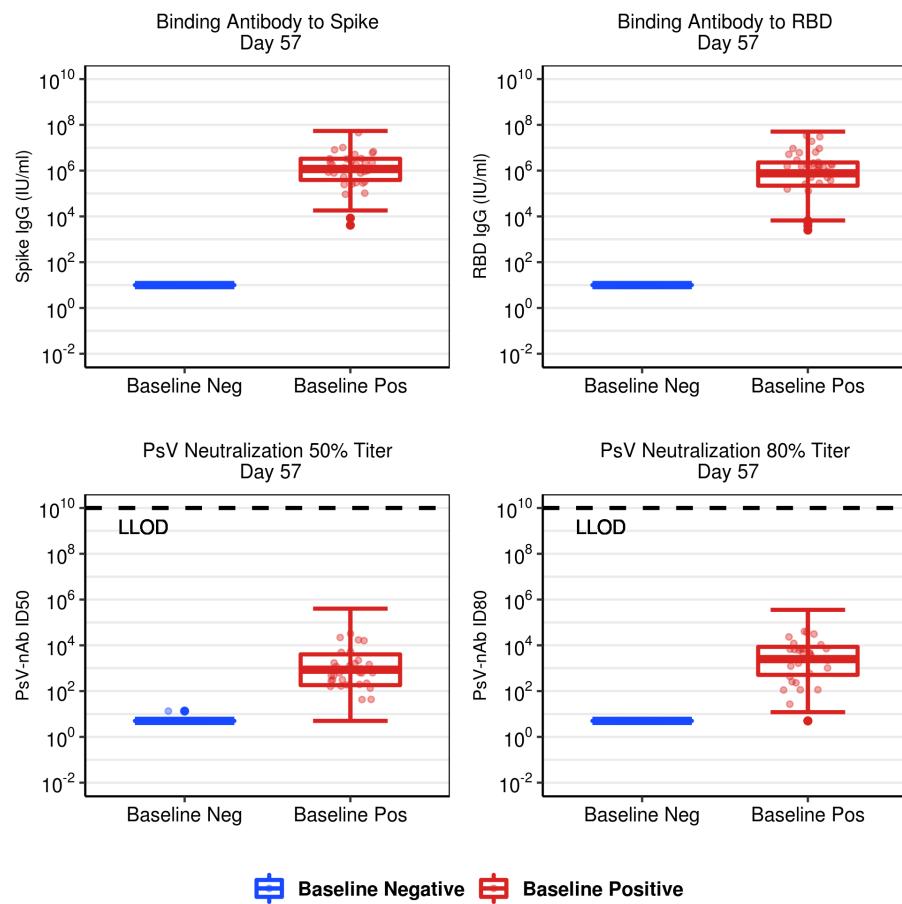


Figure 1.41: (Mock data) Boxplots of D57 Ab markers: baseline positive + negative placebo arm

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT55

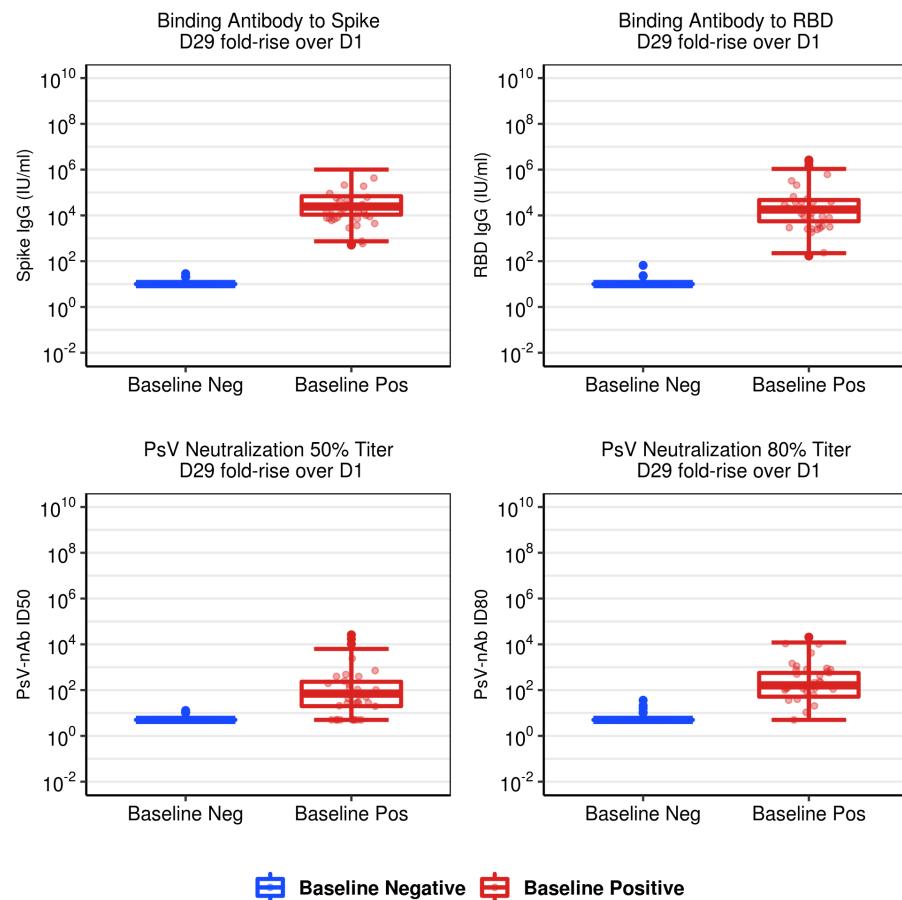


Figure 1.42: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive + negative placebo arm

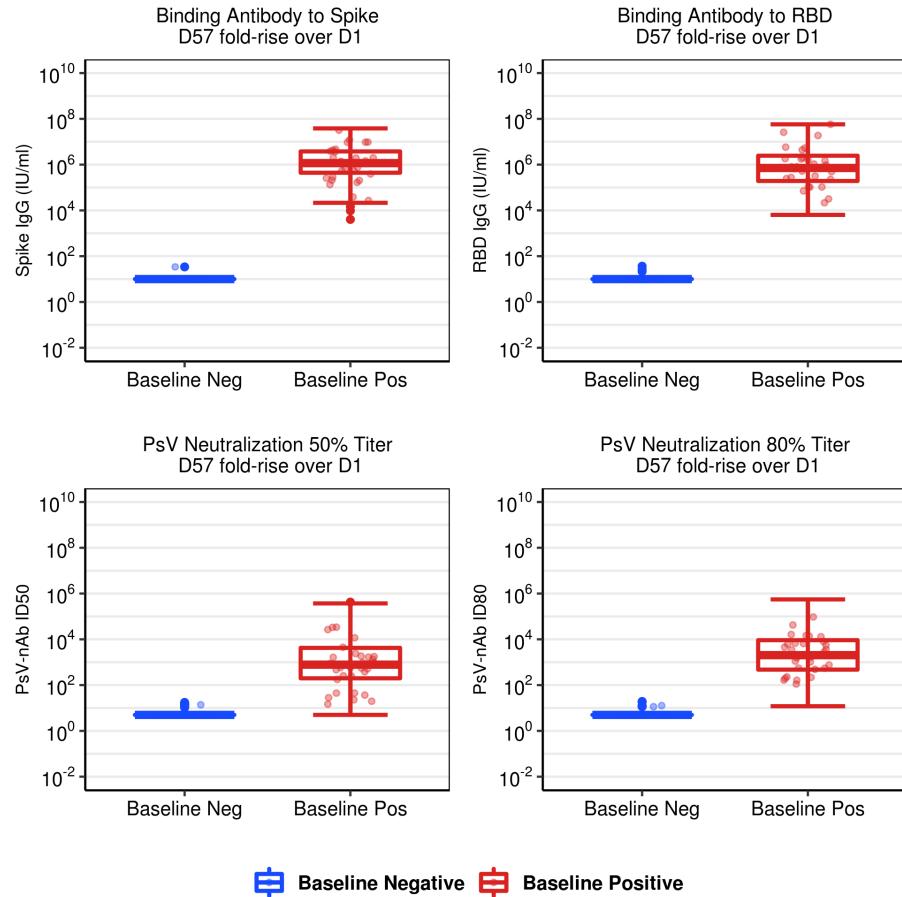


Figure 1.43: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive + negative placebo arm

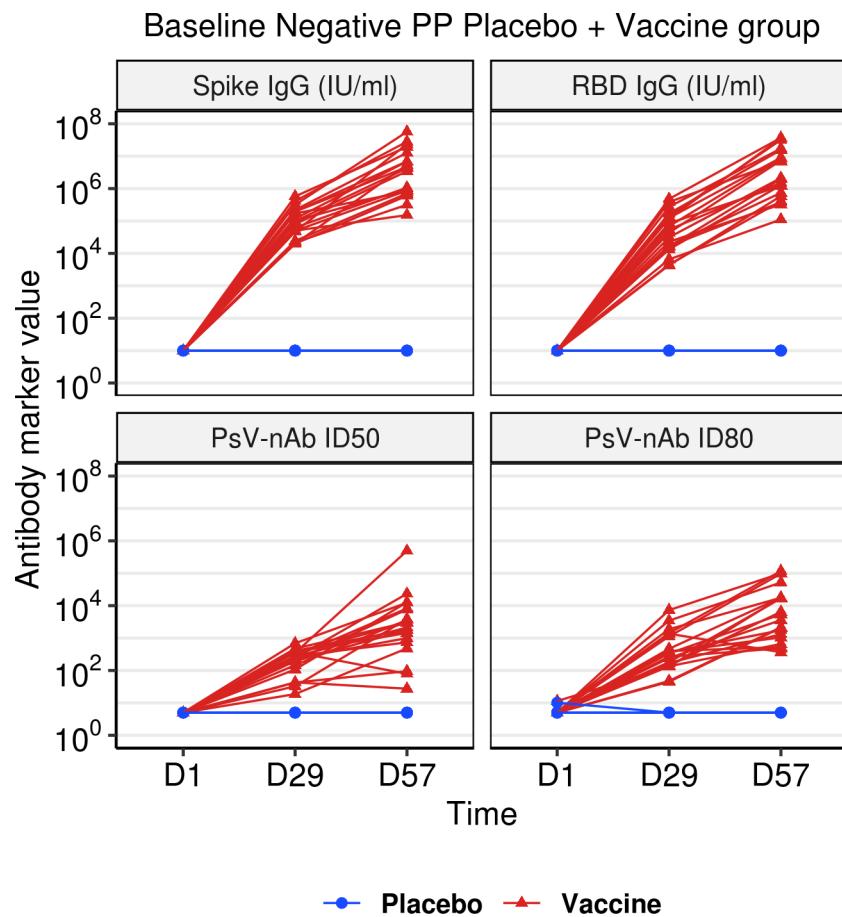


Figure 1.44: (Mock data) Spaghetti plots of Ab markers over time: baseline negative vaccine + placebo arm

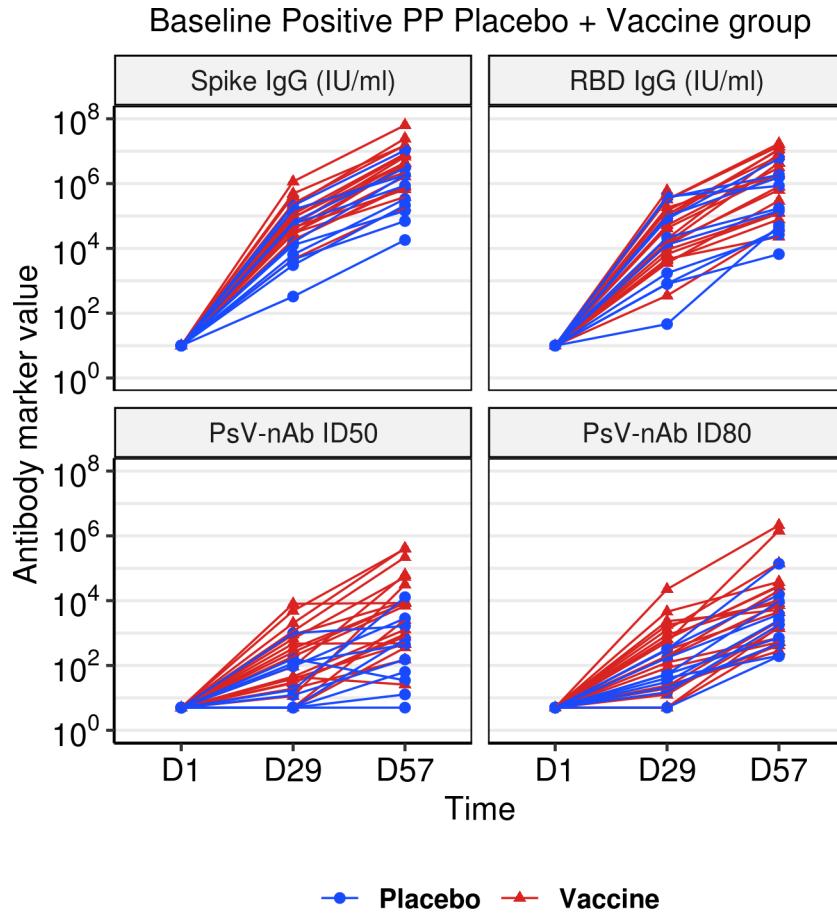


Figure 1.45: (Mock data) Spaghetti plots of Ab markers over time: baseline positive vaccine + placebo arm

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT59

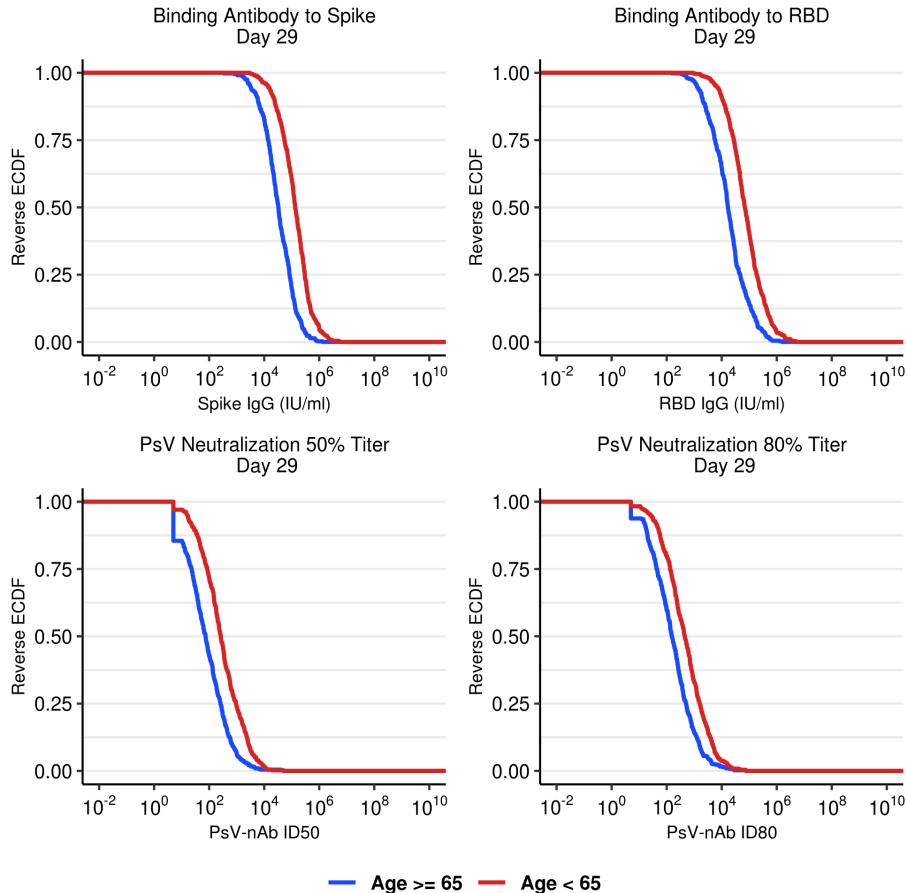


Figure 1.46: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age groups.

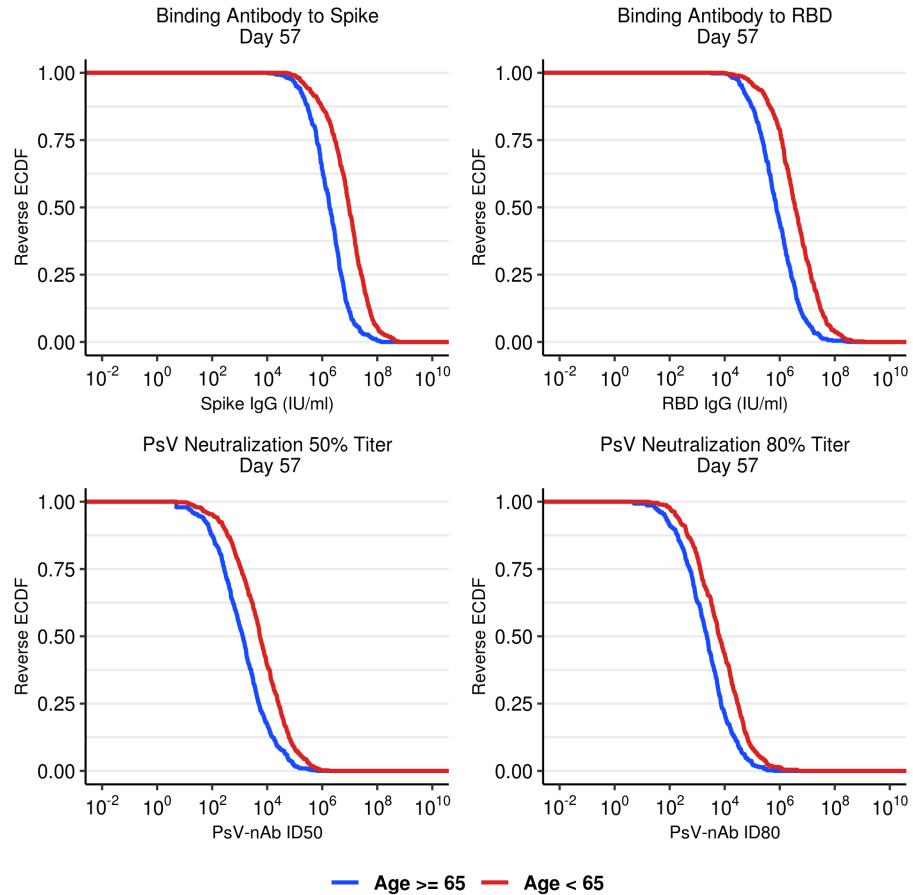


Figure 1.47: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age groups.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT61

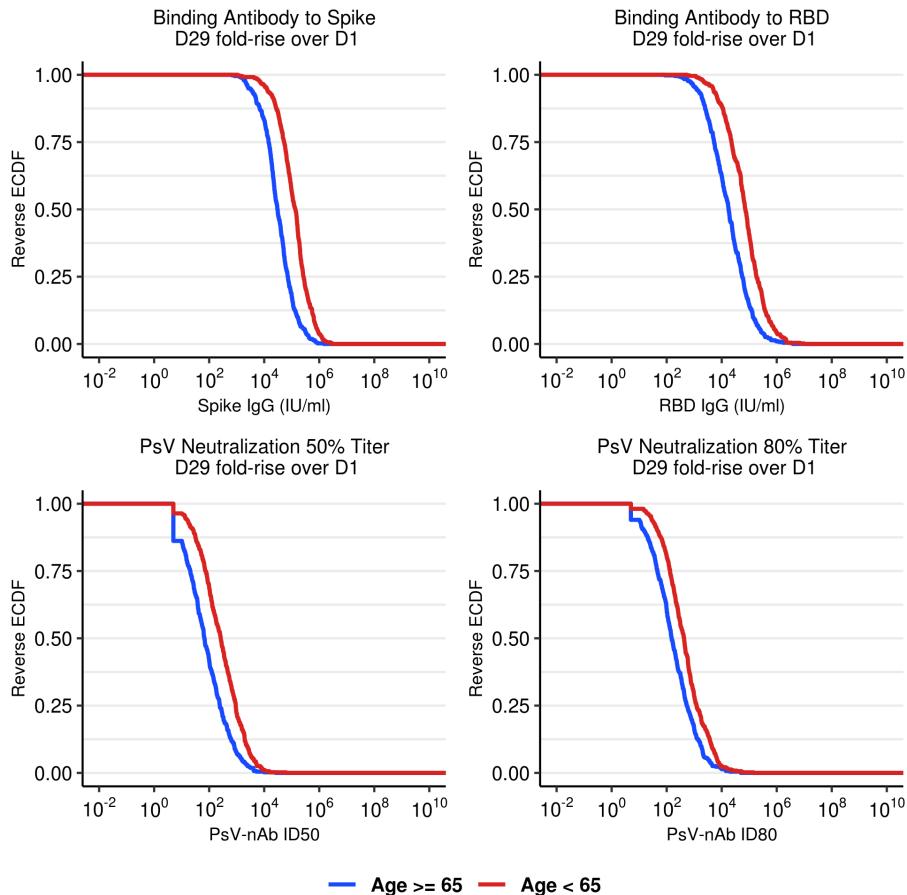


Figure 1.48: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age groups.

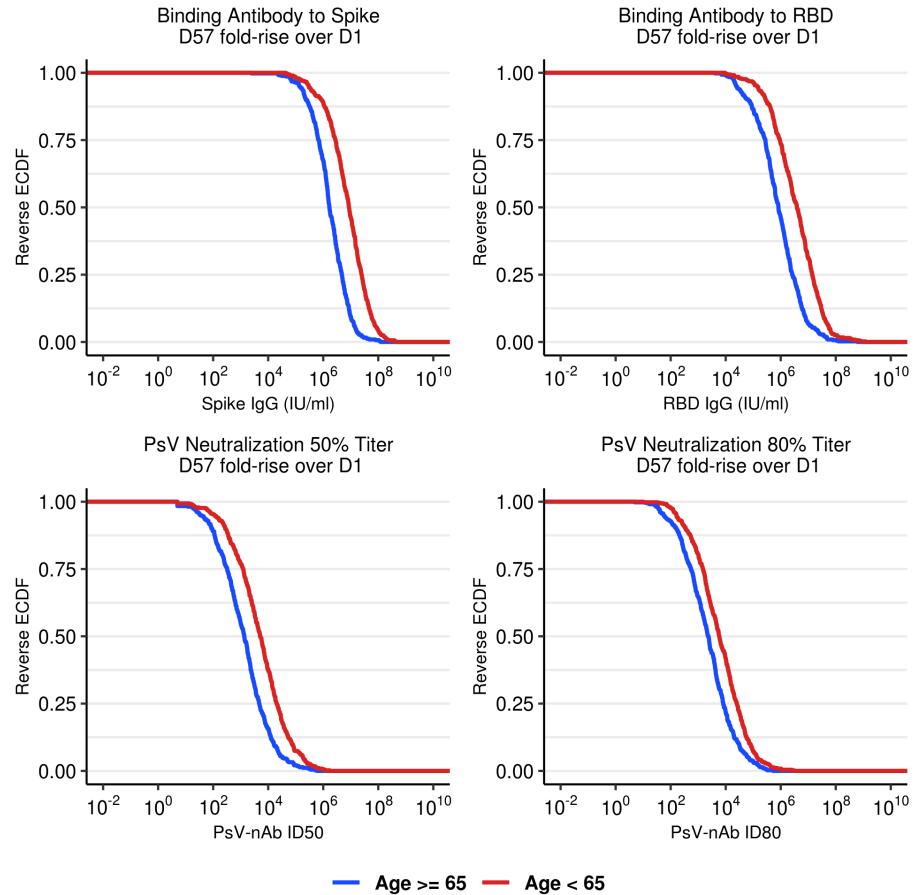


Figure 1.49: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age groups.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT63

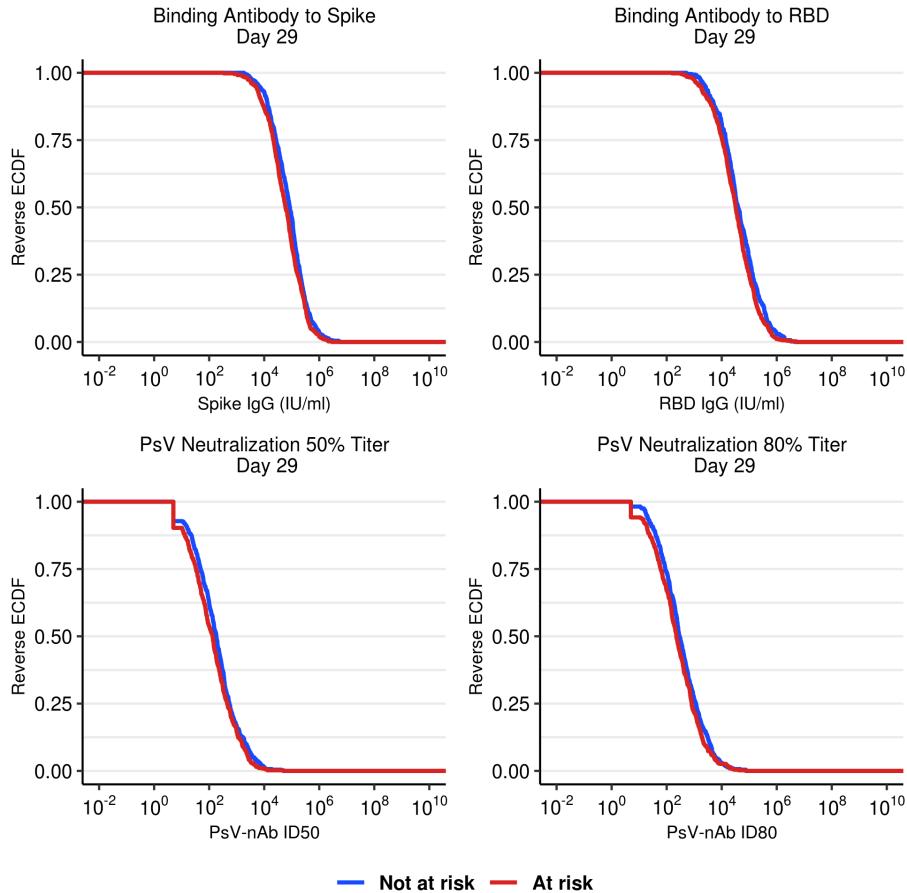


Figure 1.50: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by high-risk condition.

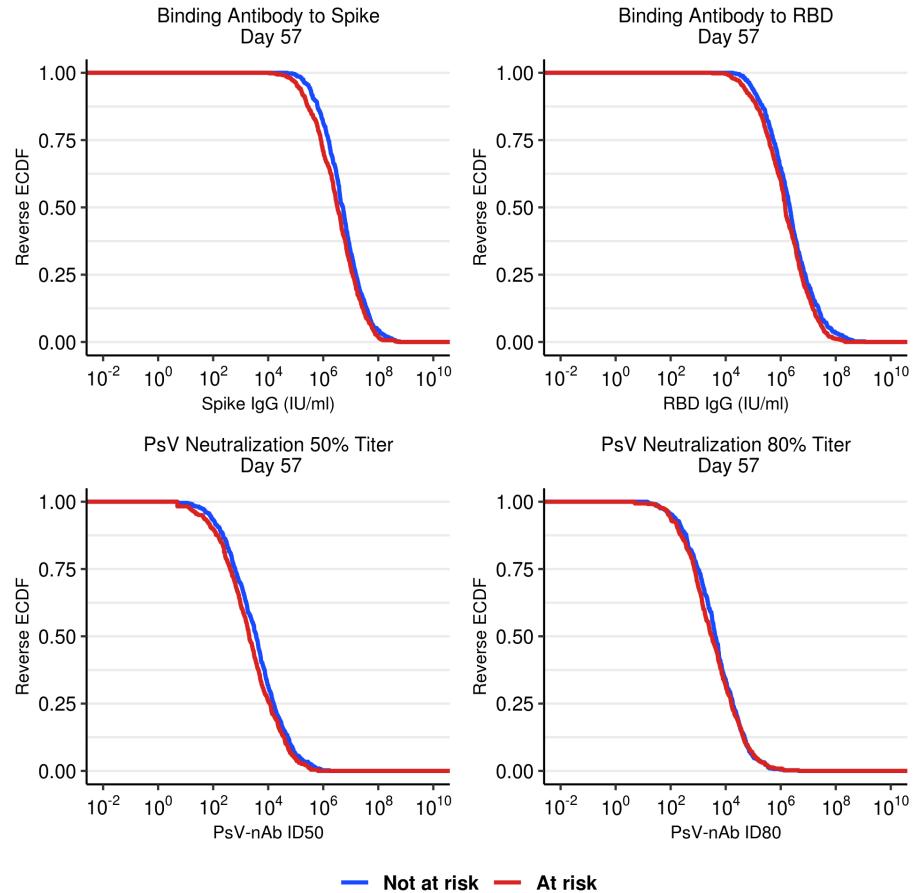


Figure 1.51: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT65

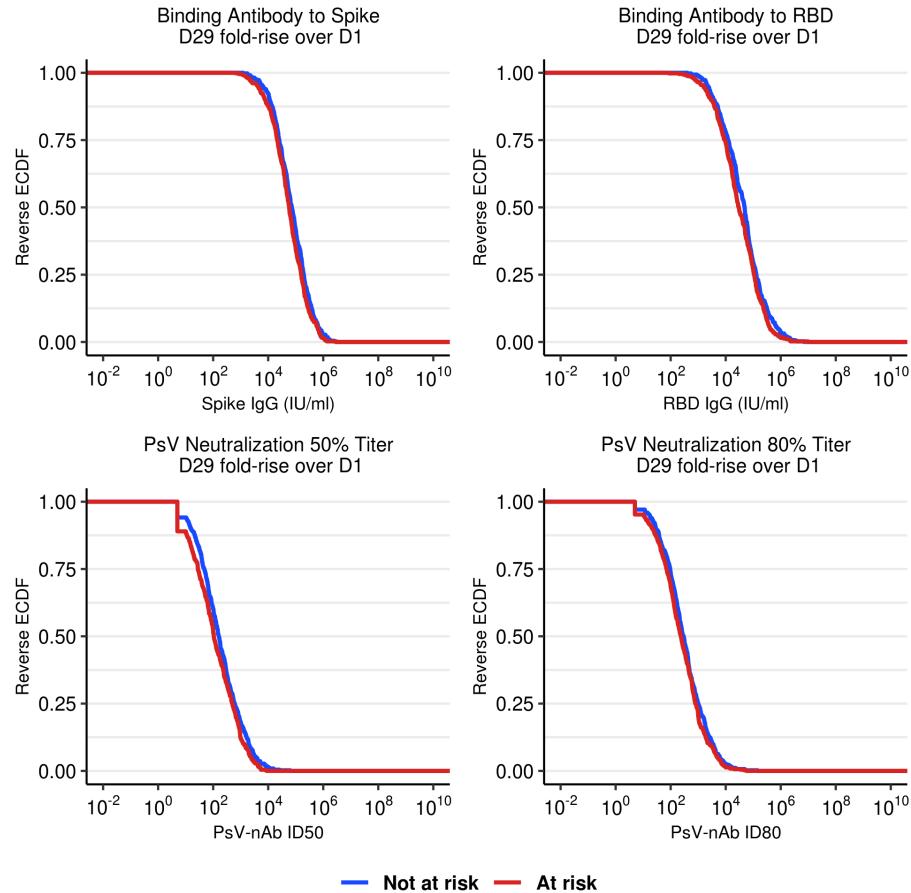


Figure 1.52: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by high-risk condition.

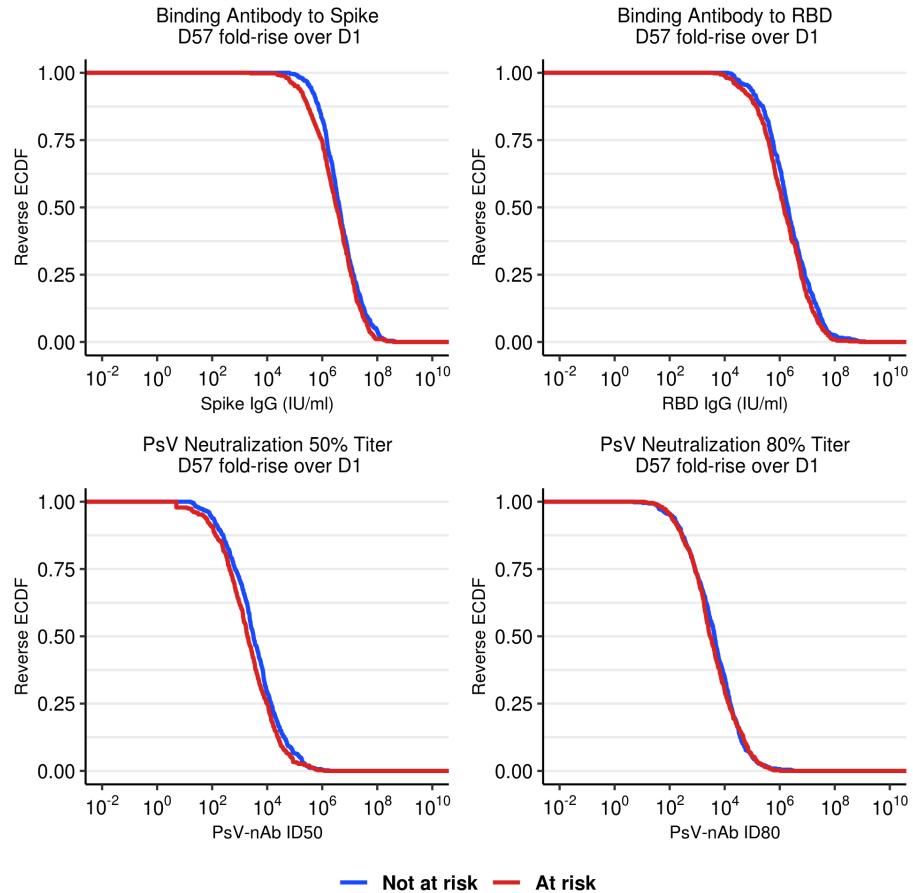


Figure 1.53: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT67

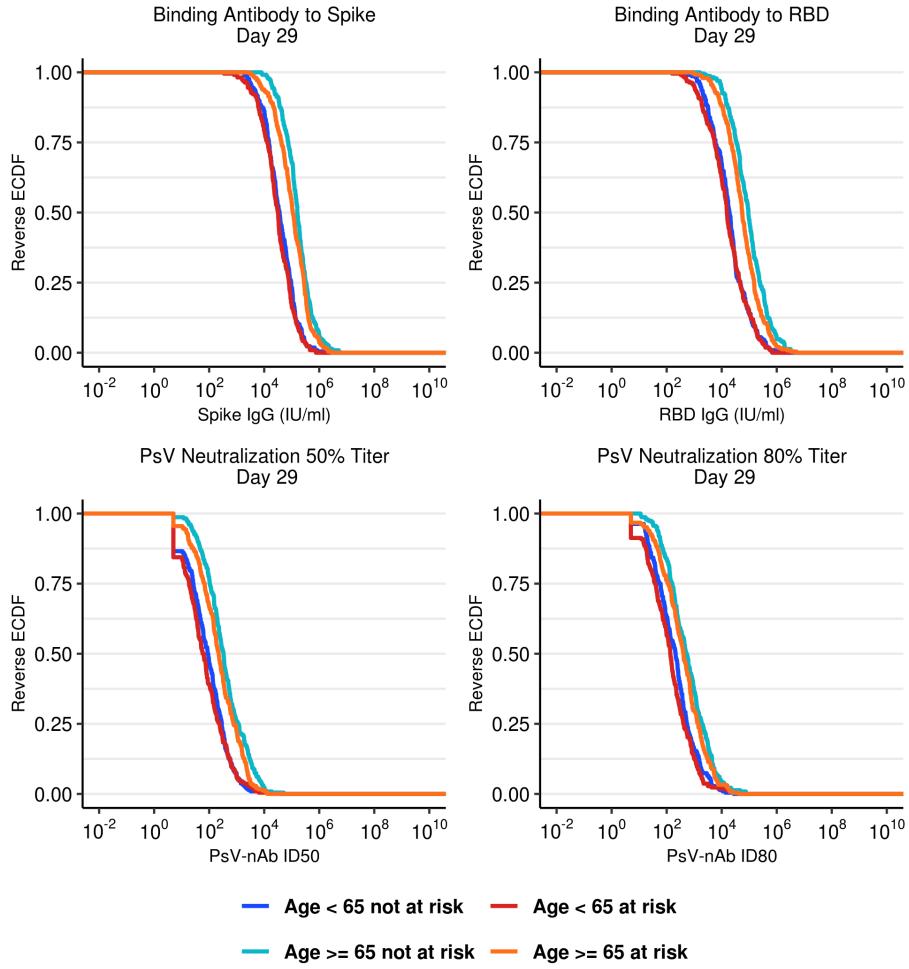


Figure 1.54: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and high-risk condition.

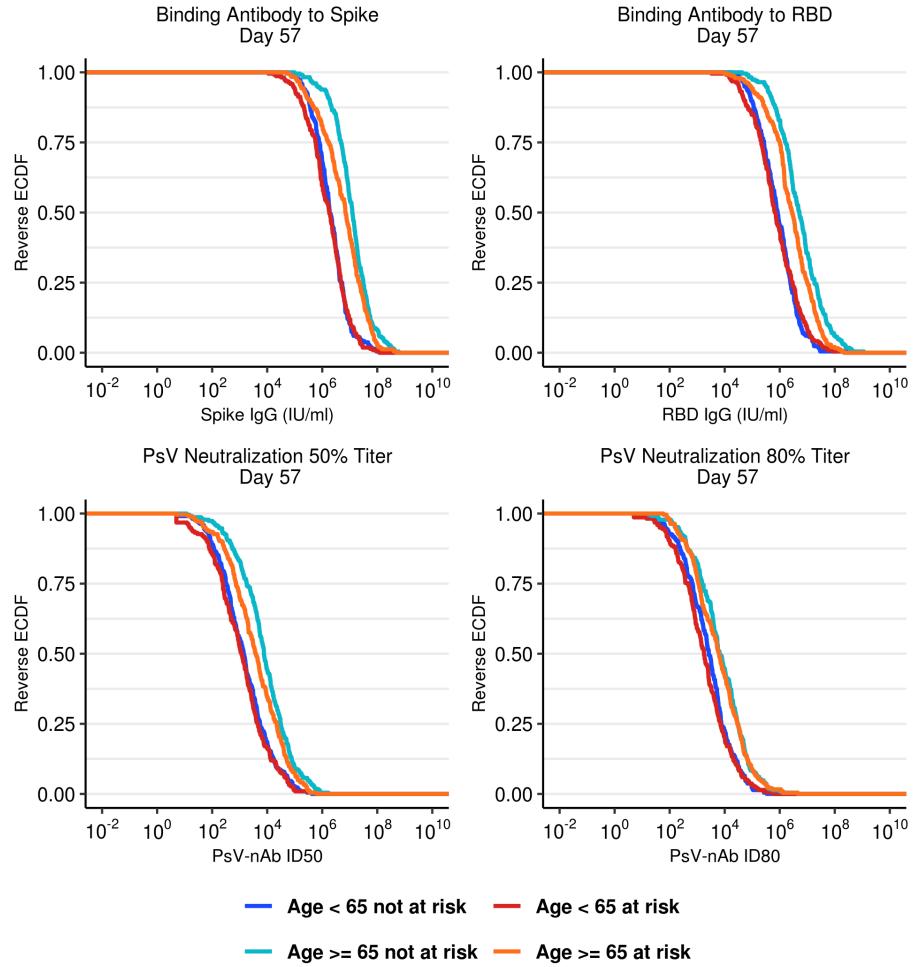


Figure 1.55: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT69

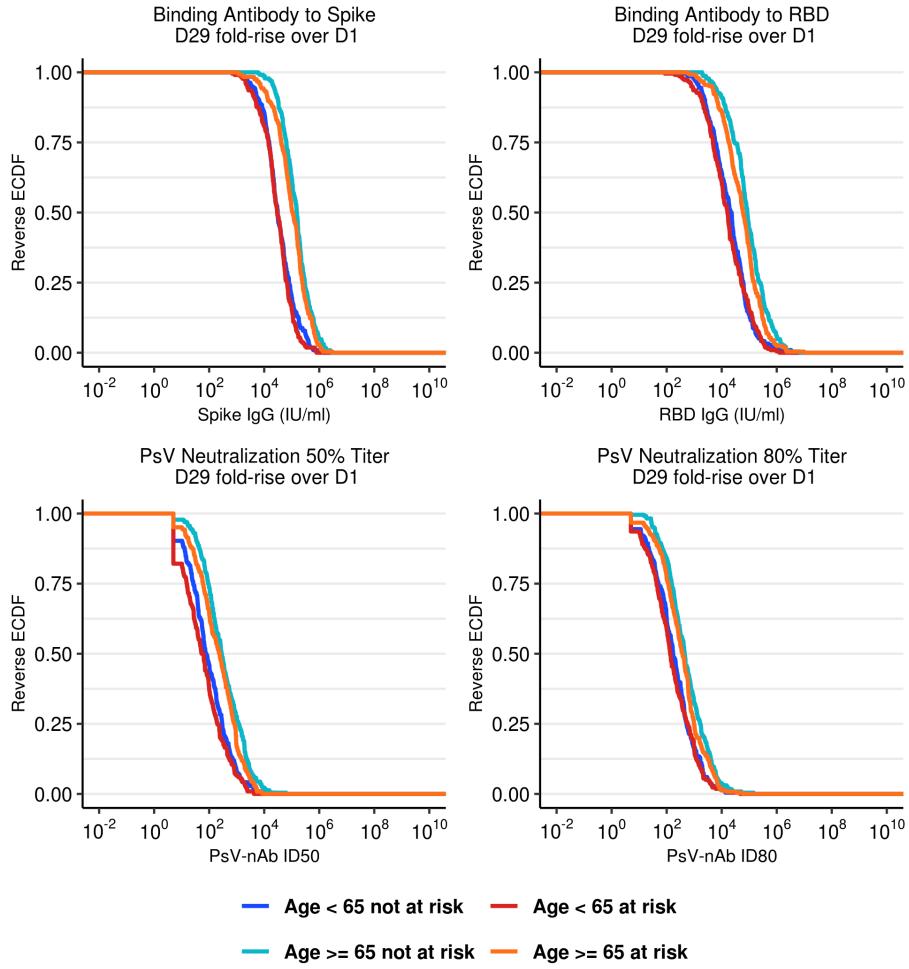


Figure 1.56: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and high-risk condition.

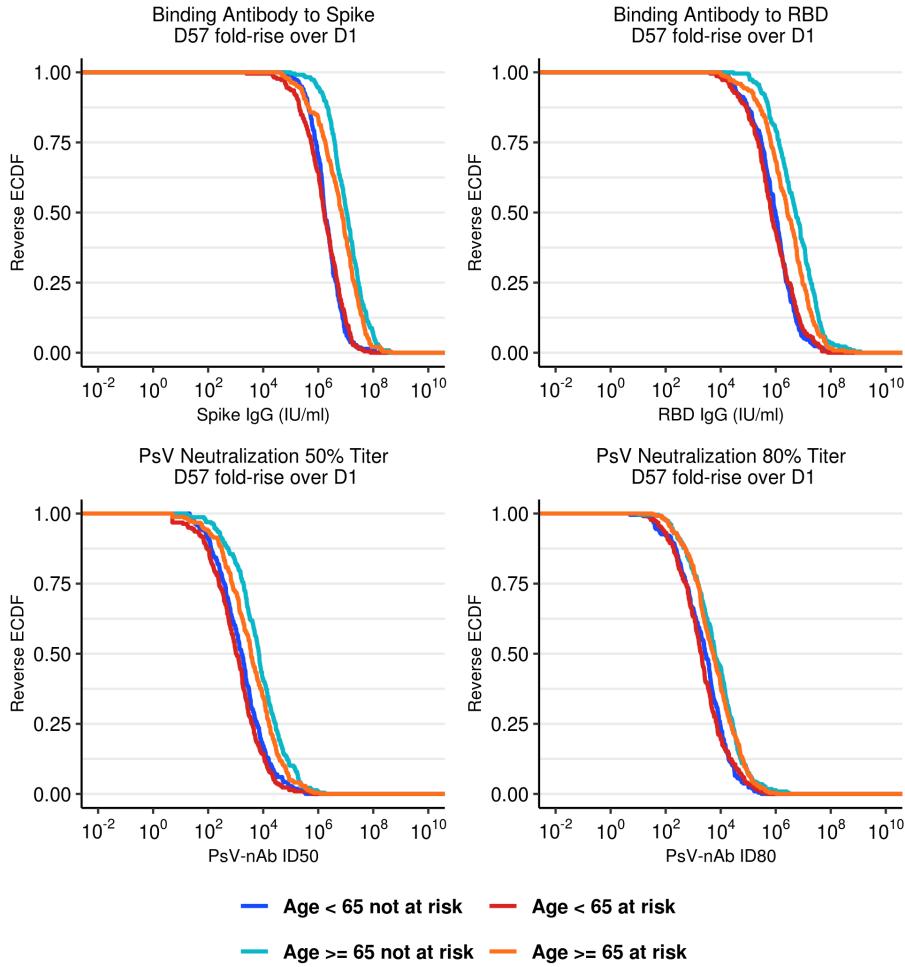


Figure 1.57: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and high-risk condition.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT71

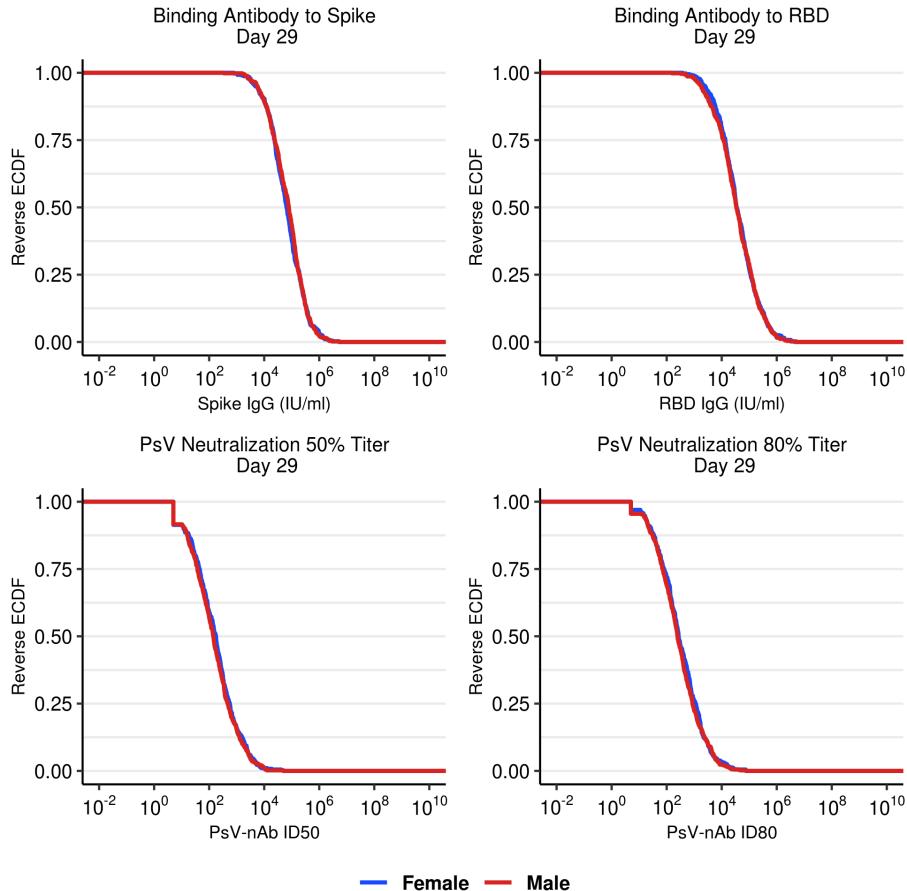


Figure 1.58: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by sex assigned at birth.

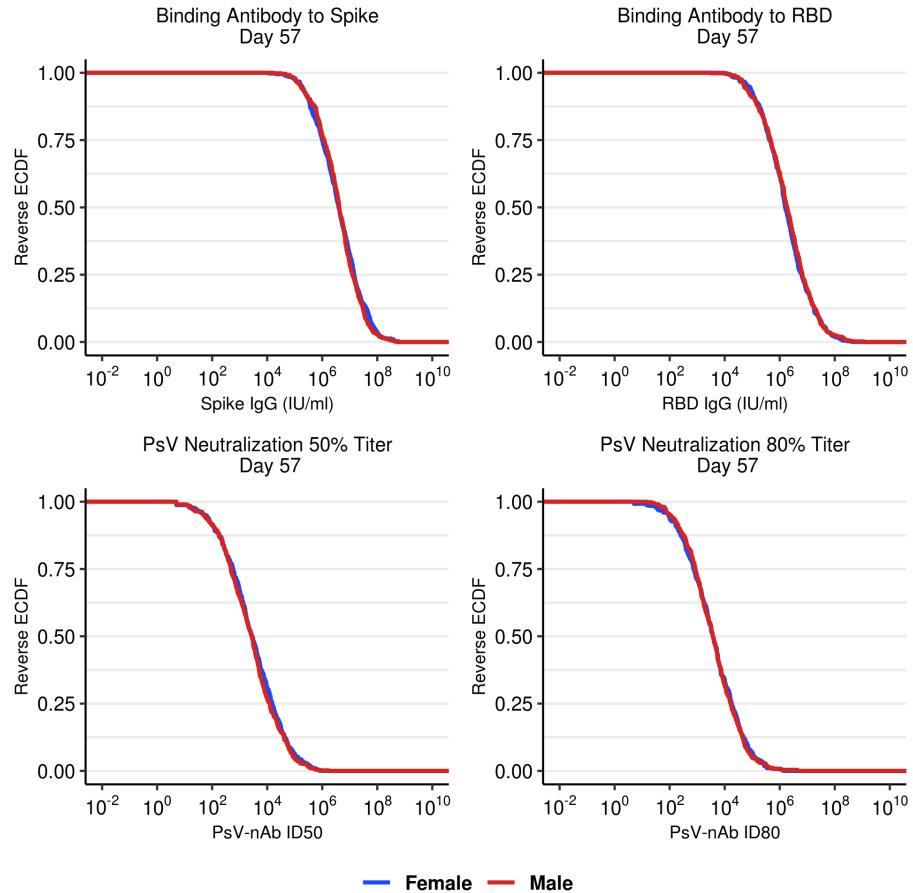


Figure 1.59: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT73

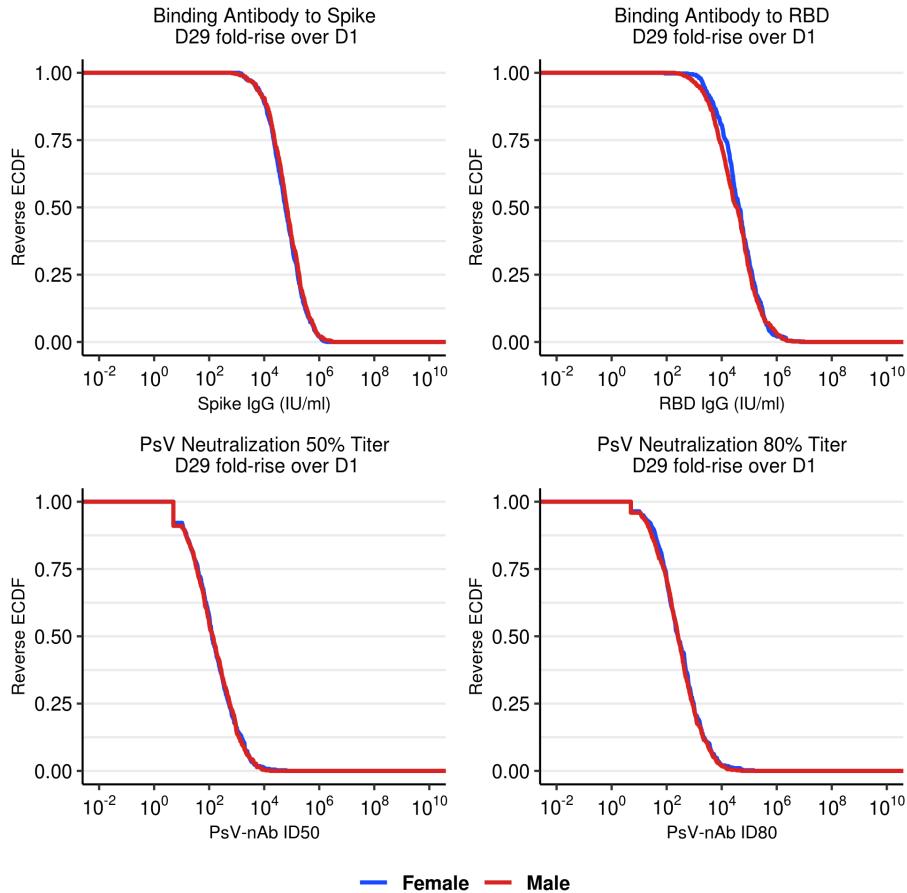


Figure 1.60: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by sex assigned at birth.

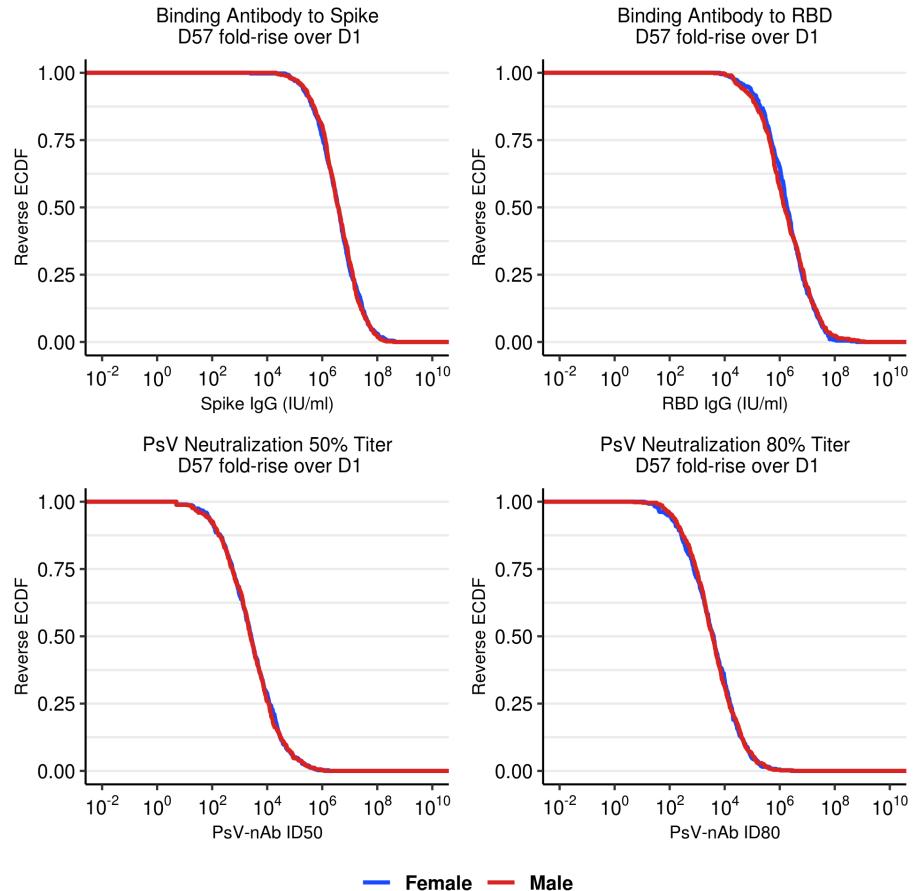


Figure 1.61: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT75

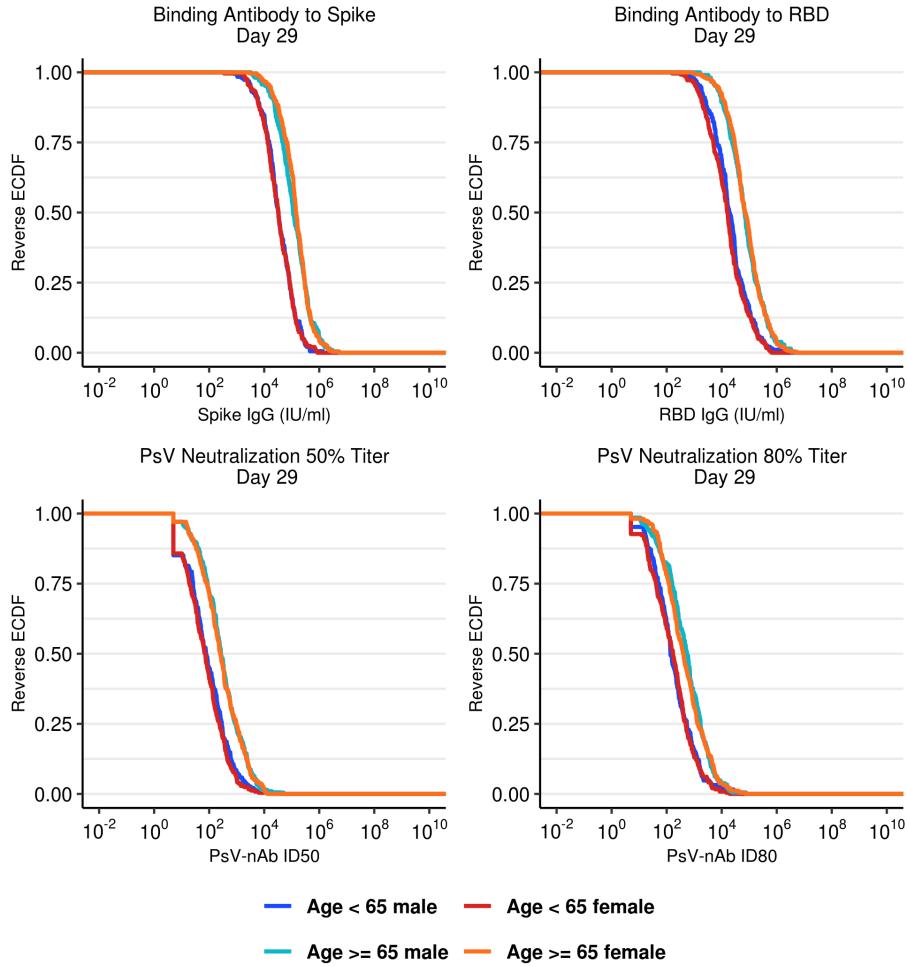


Figure 1.62: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and sex assigned at birth.

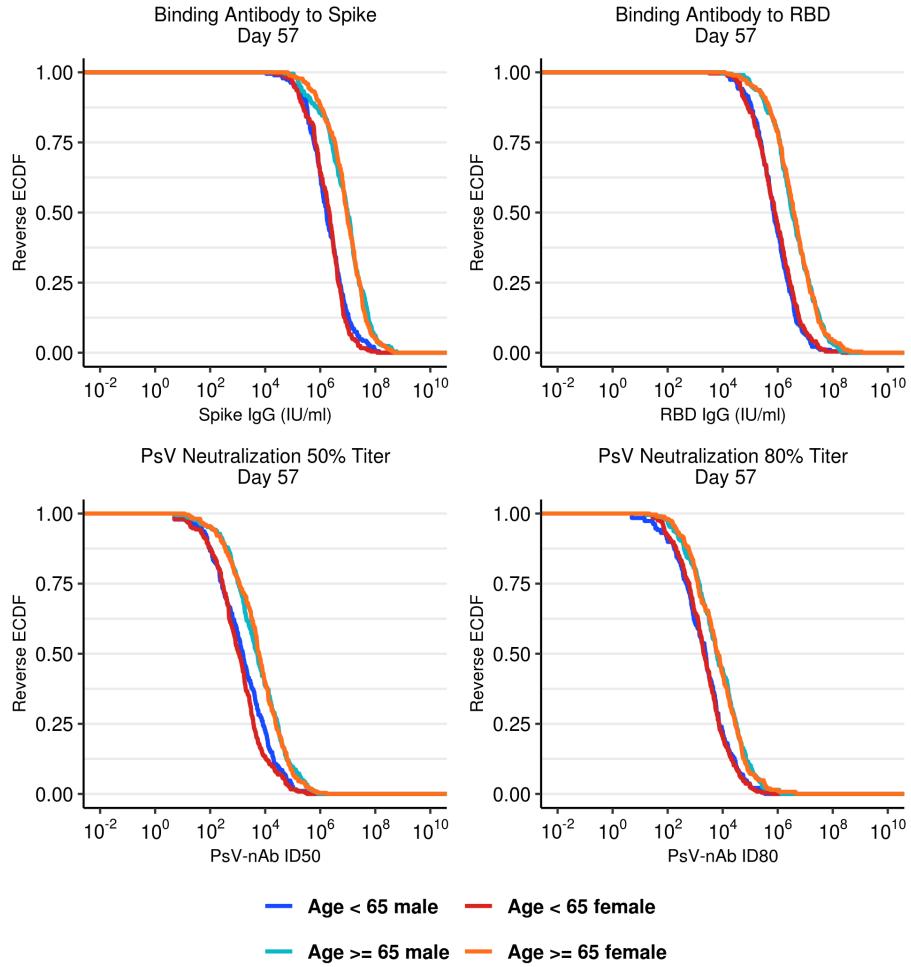


Figure 1.63: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and sex assigned at birth.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT77

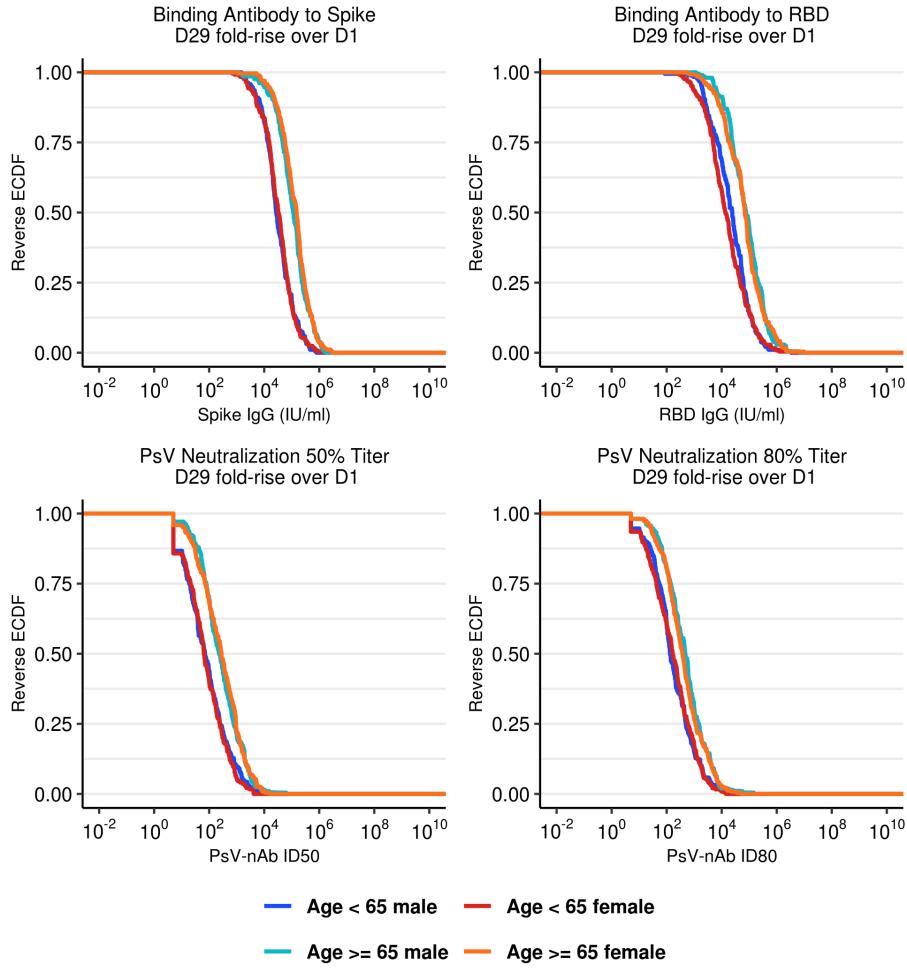


Figure 1.64: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and sex assigned at birth.

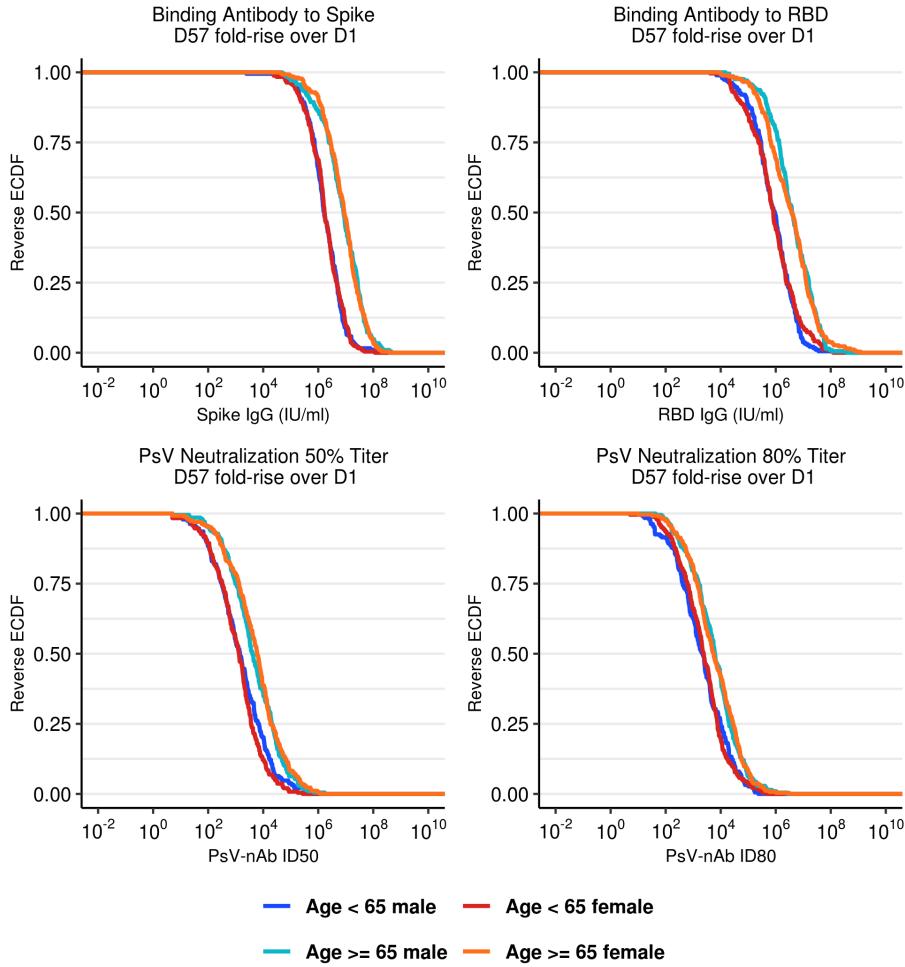


Figure 1.65: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and sex at birth.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT79

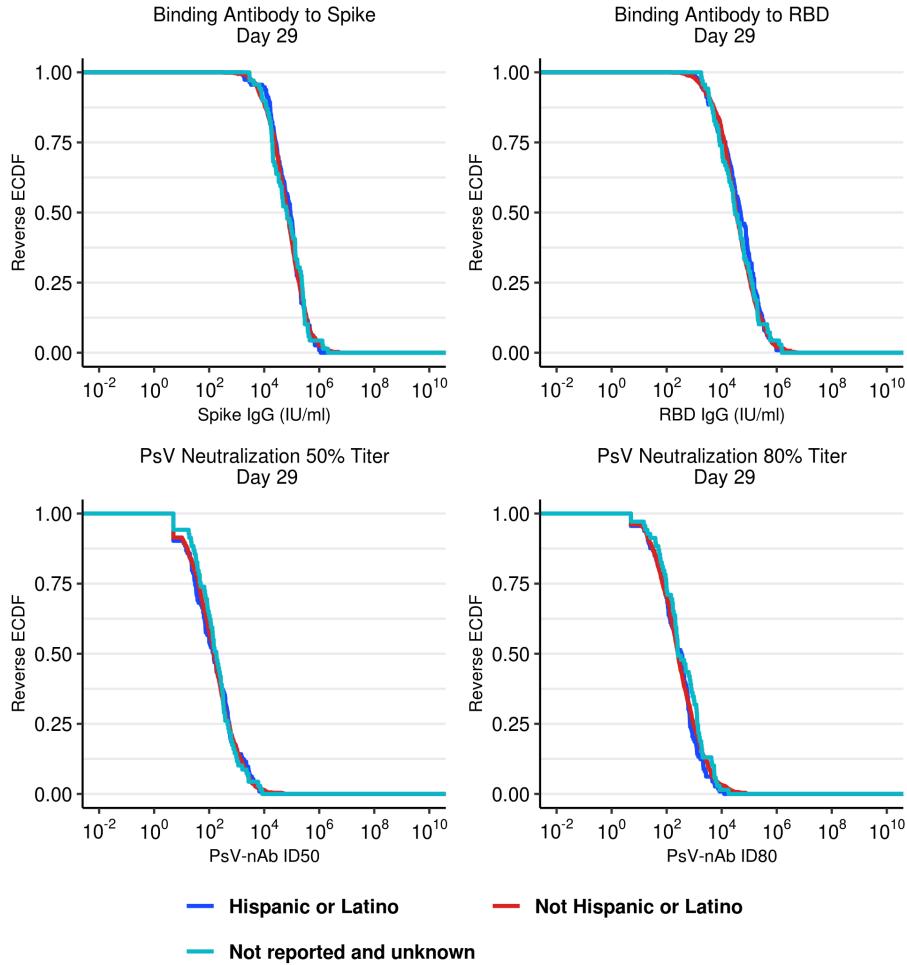


Figure 1.66: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by ethnicity.

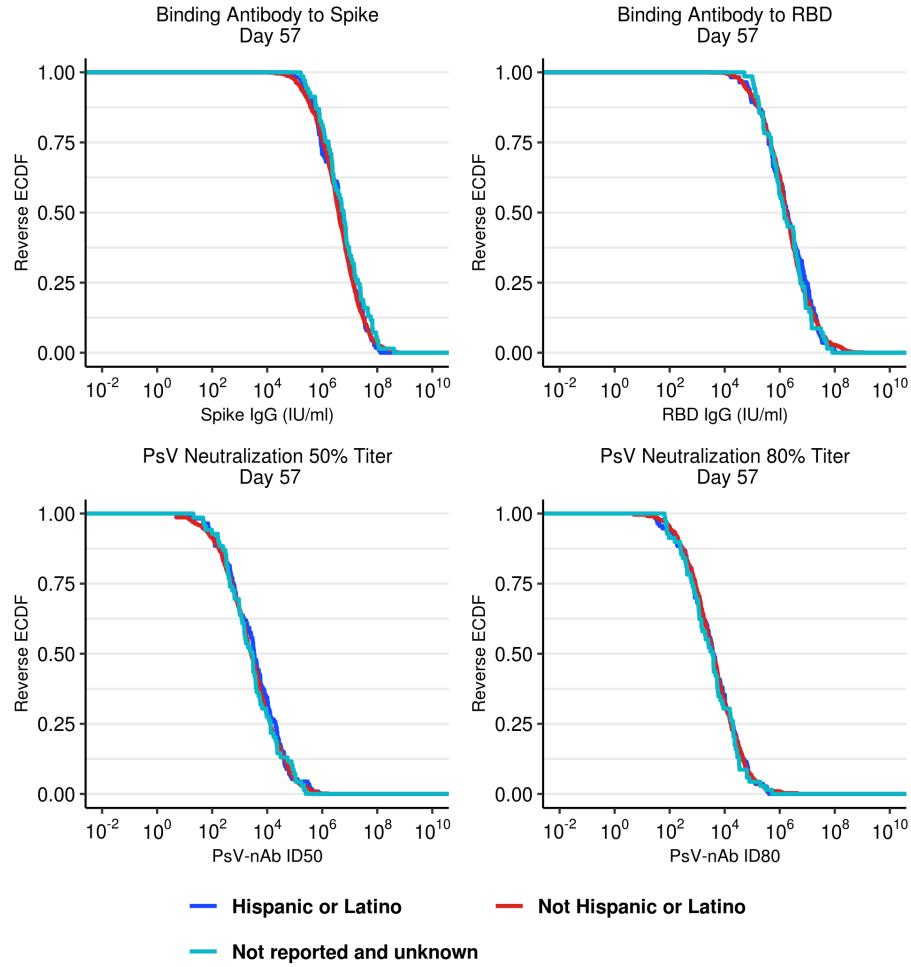


Figure 1.67: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by ethnicity.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT81

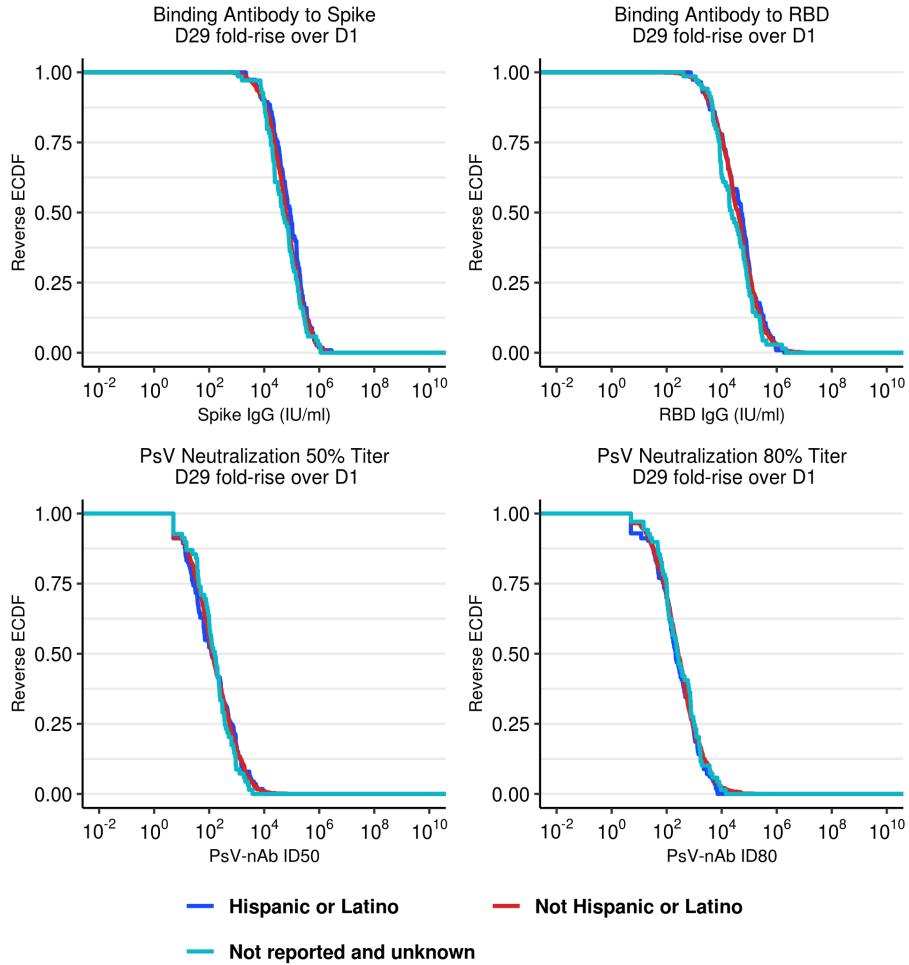


Figure 1.68: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity.

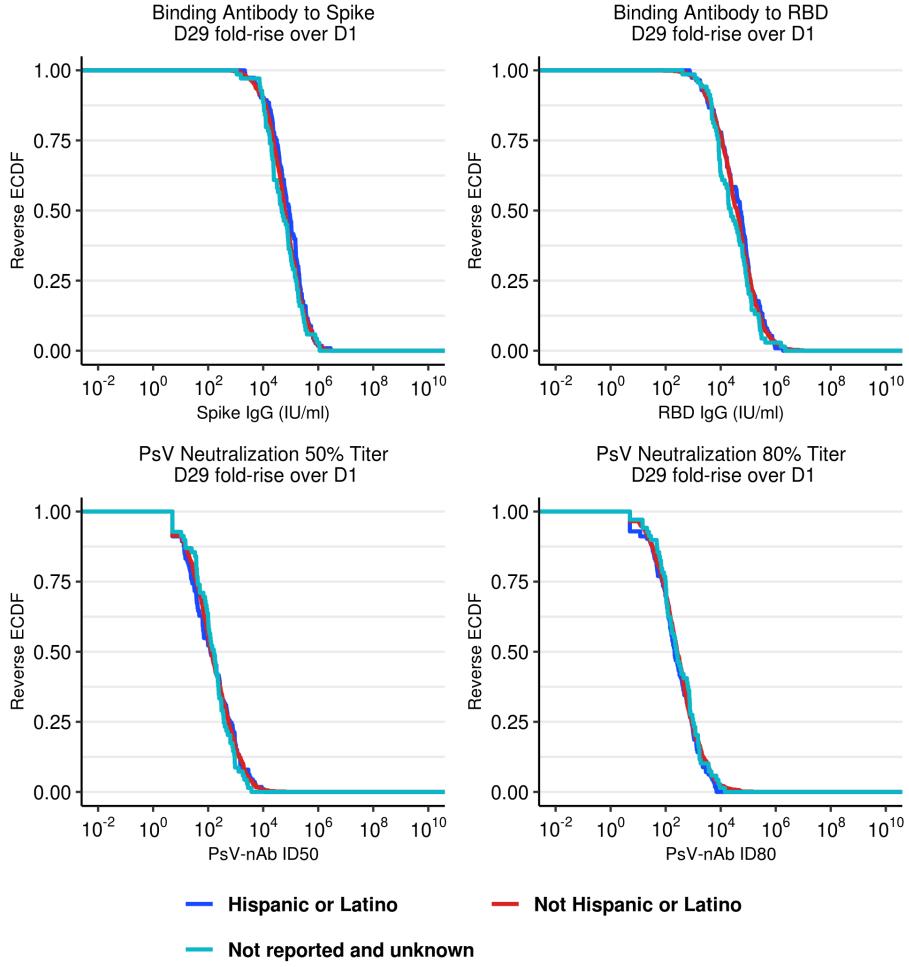


Figure 1.69: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT83

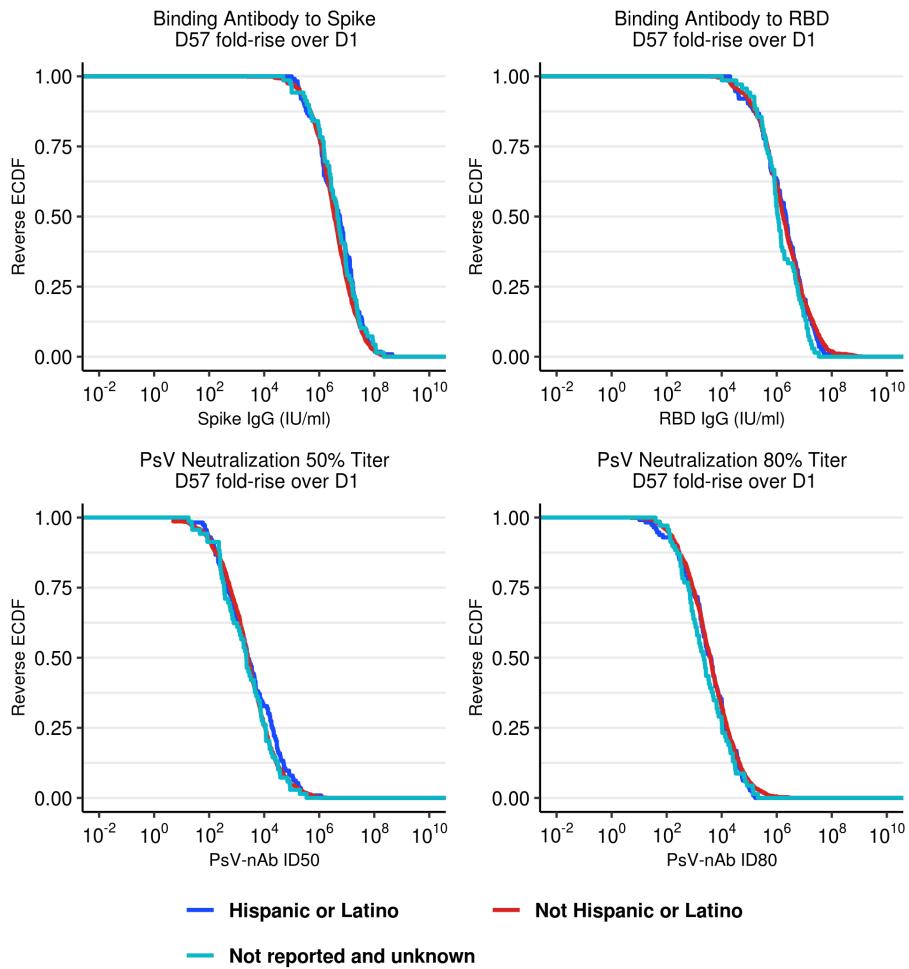


Figure 1.70: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by ethnicity.

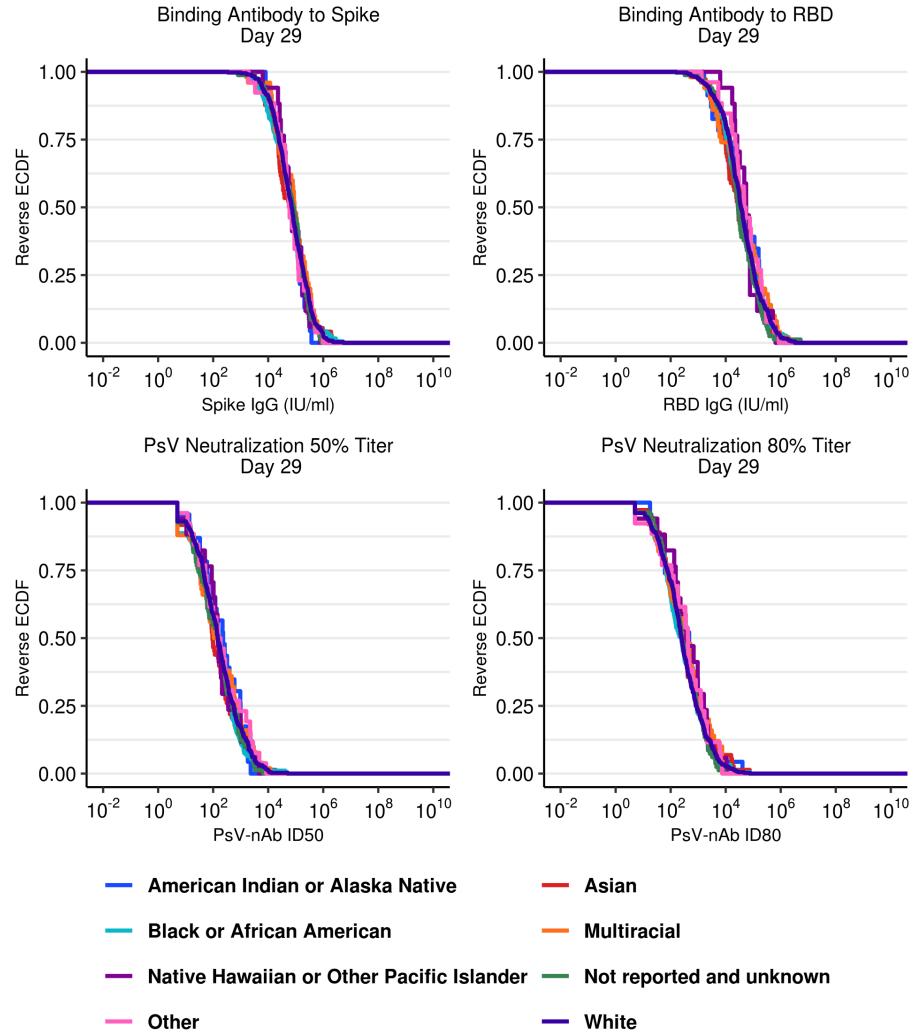


Figure 1.71: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by race.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT85

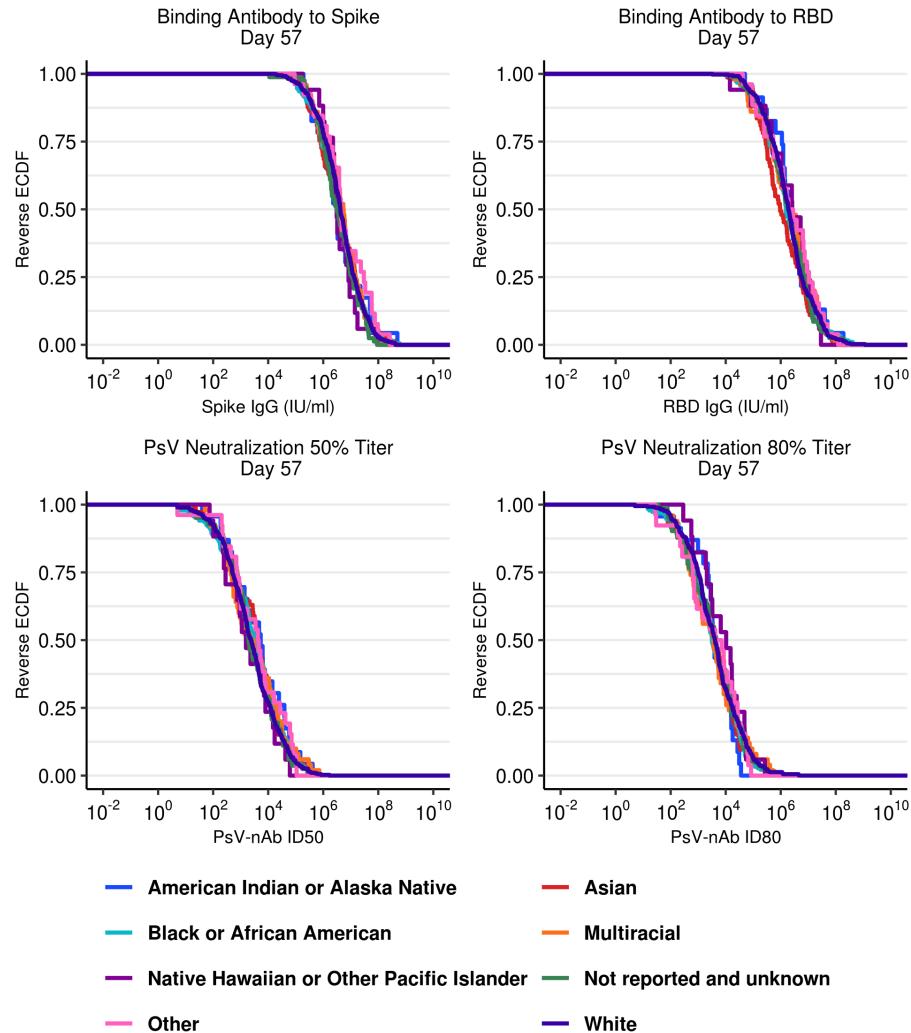


Figure 1.72: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by race.

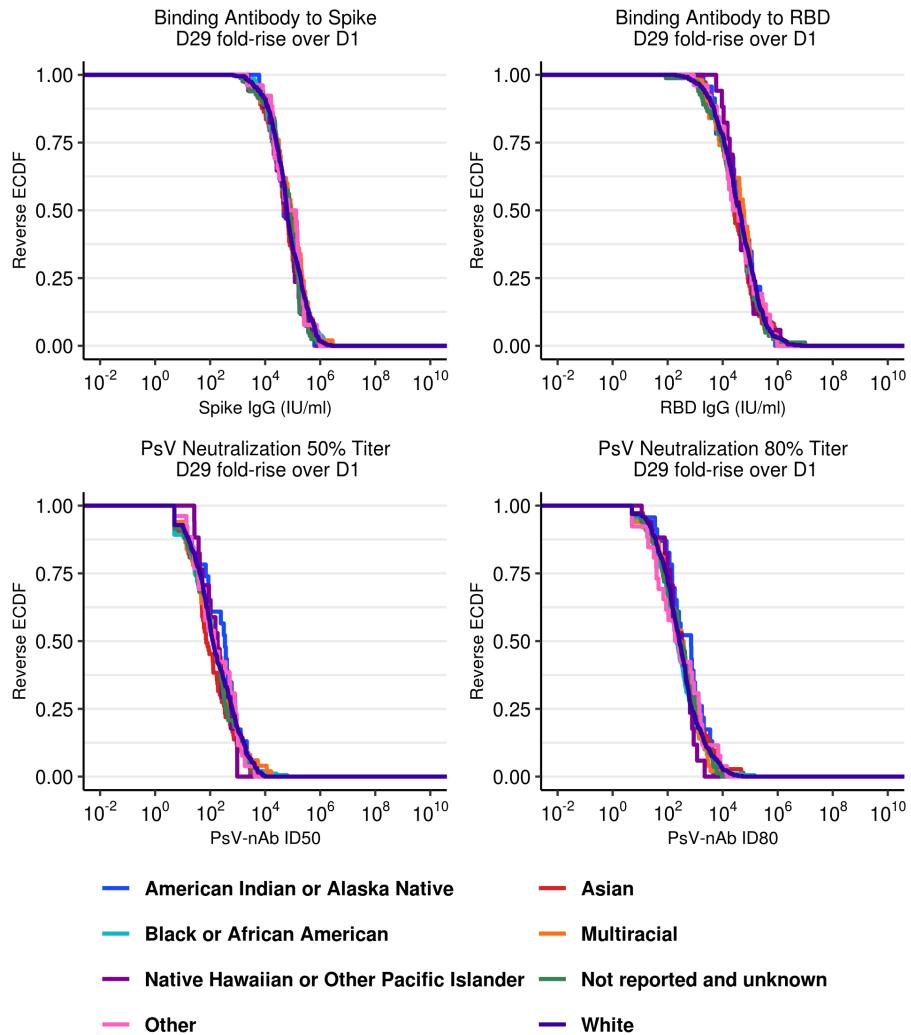


Figure 1.73: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by race.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT87

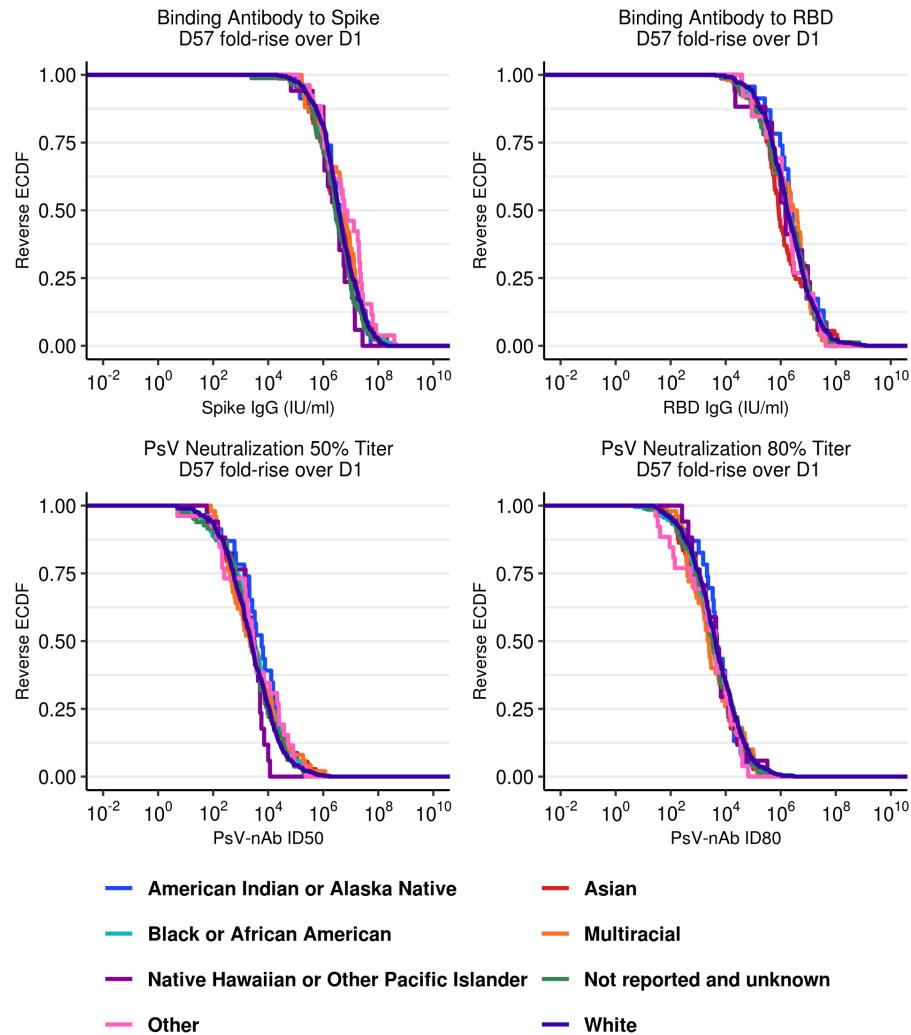


Figure 1.74: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by race.

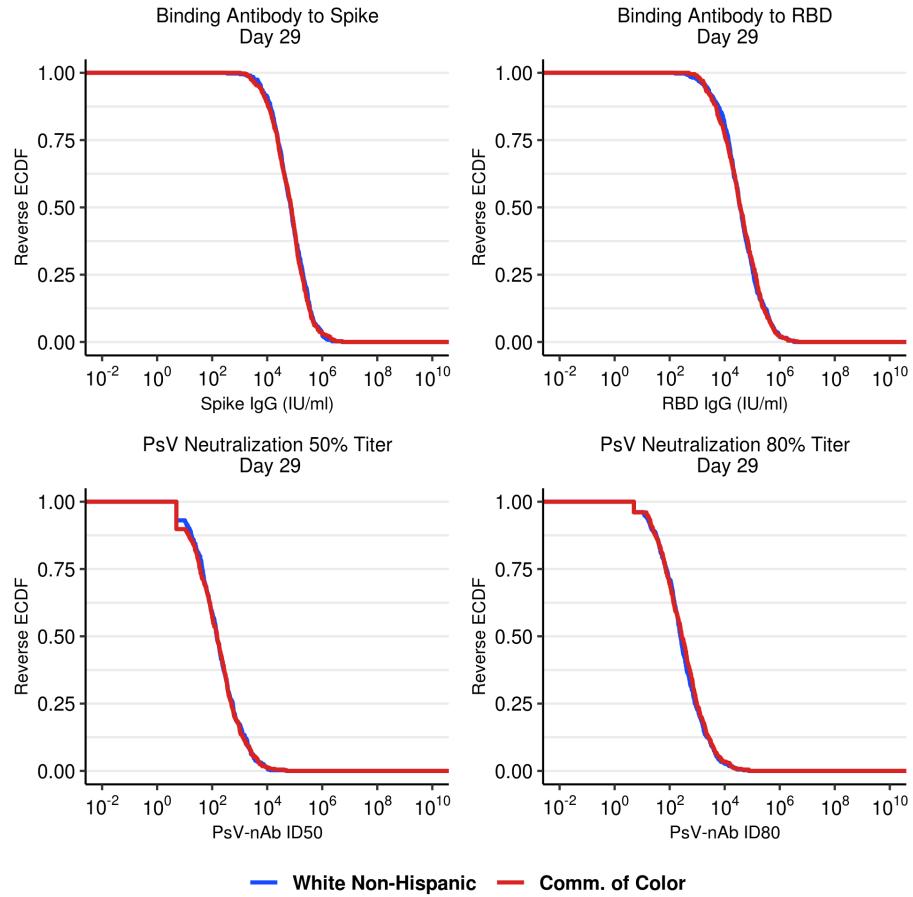


Figure 1.75: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT89

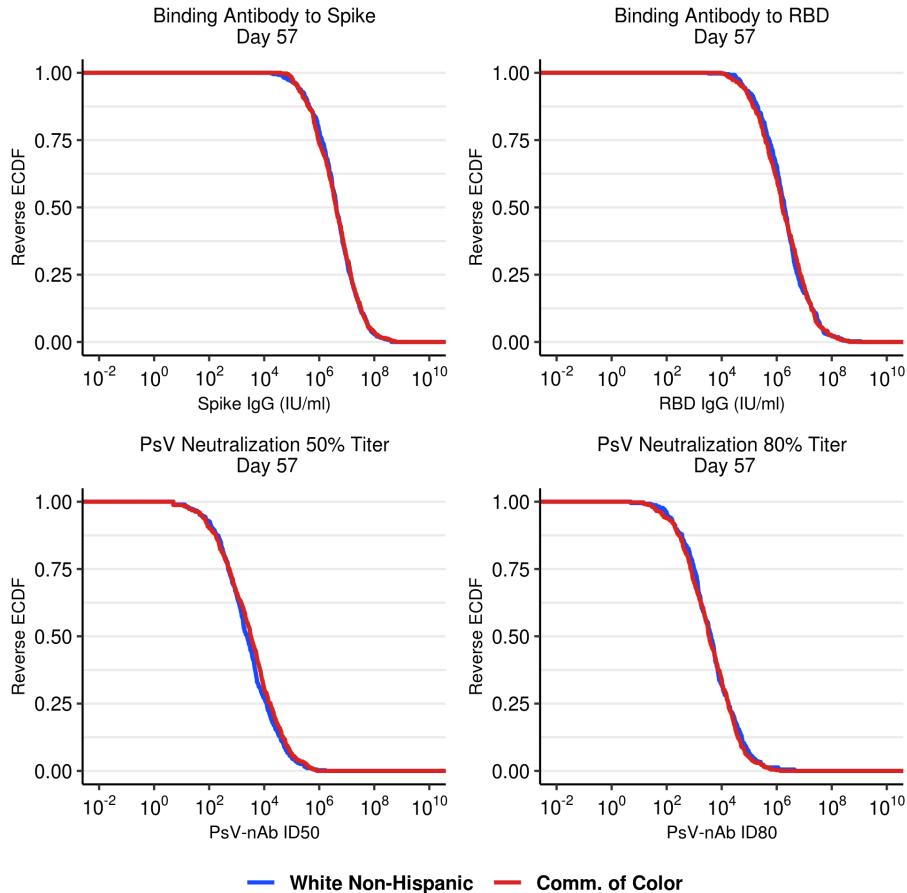


Figure 1.76: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group.

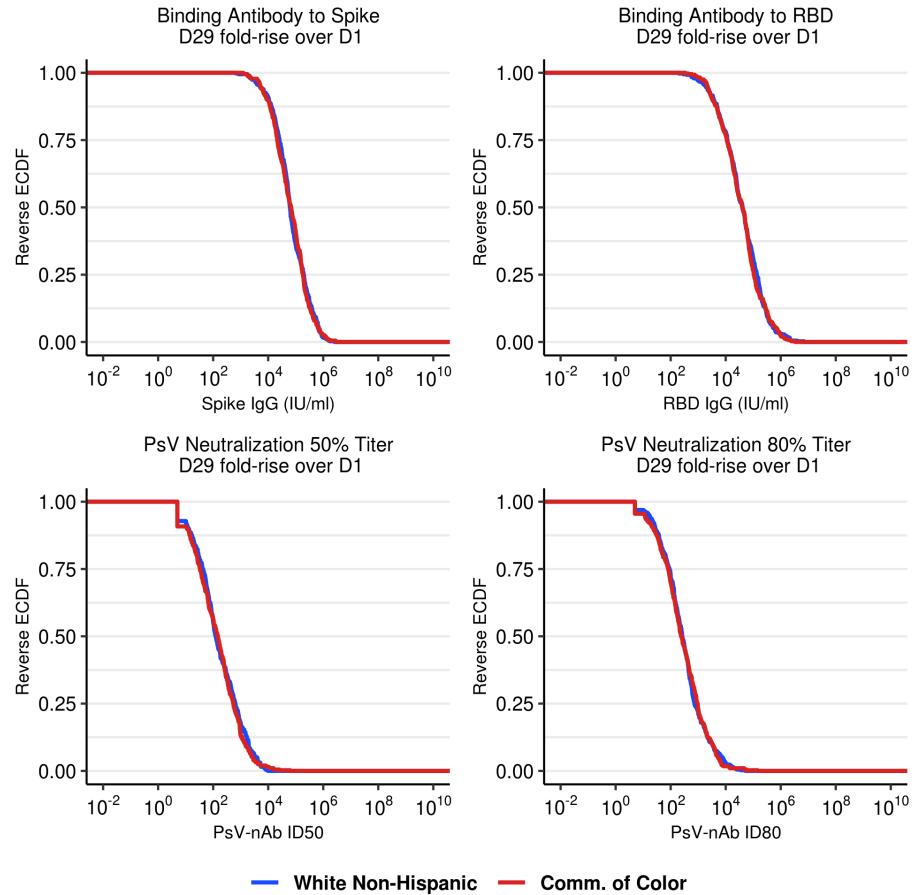


Figure 1.77: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT91

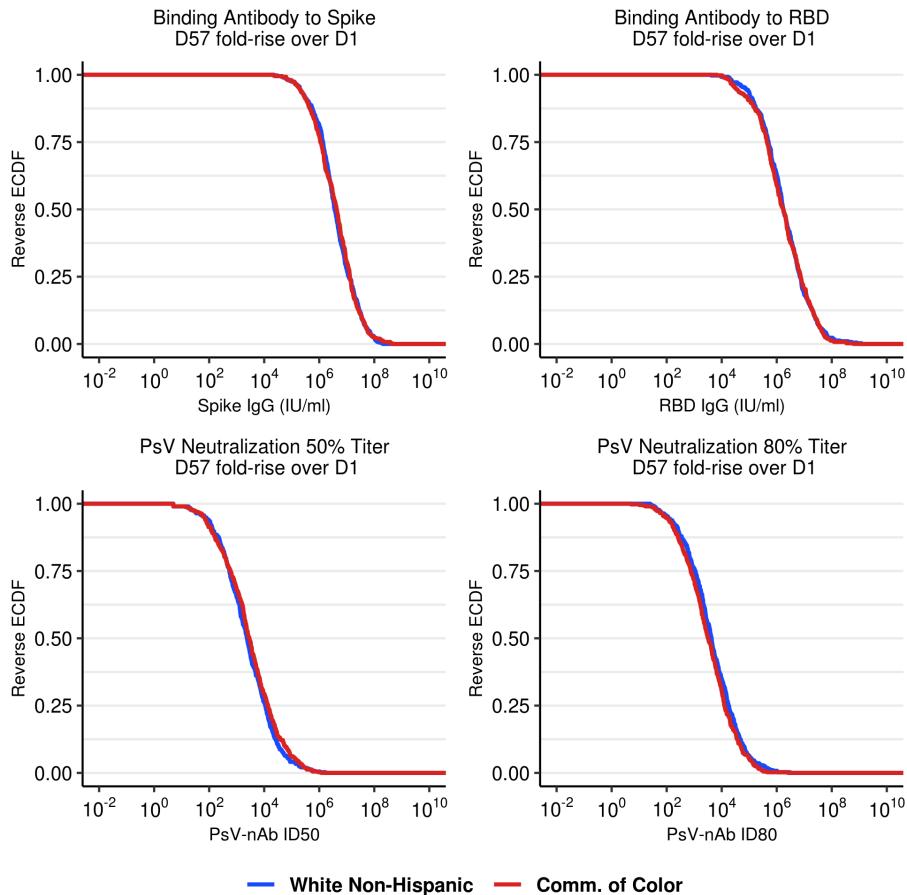


Figure 1.78: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by dichotomous classification of race and ethnic group.

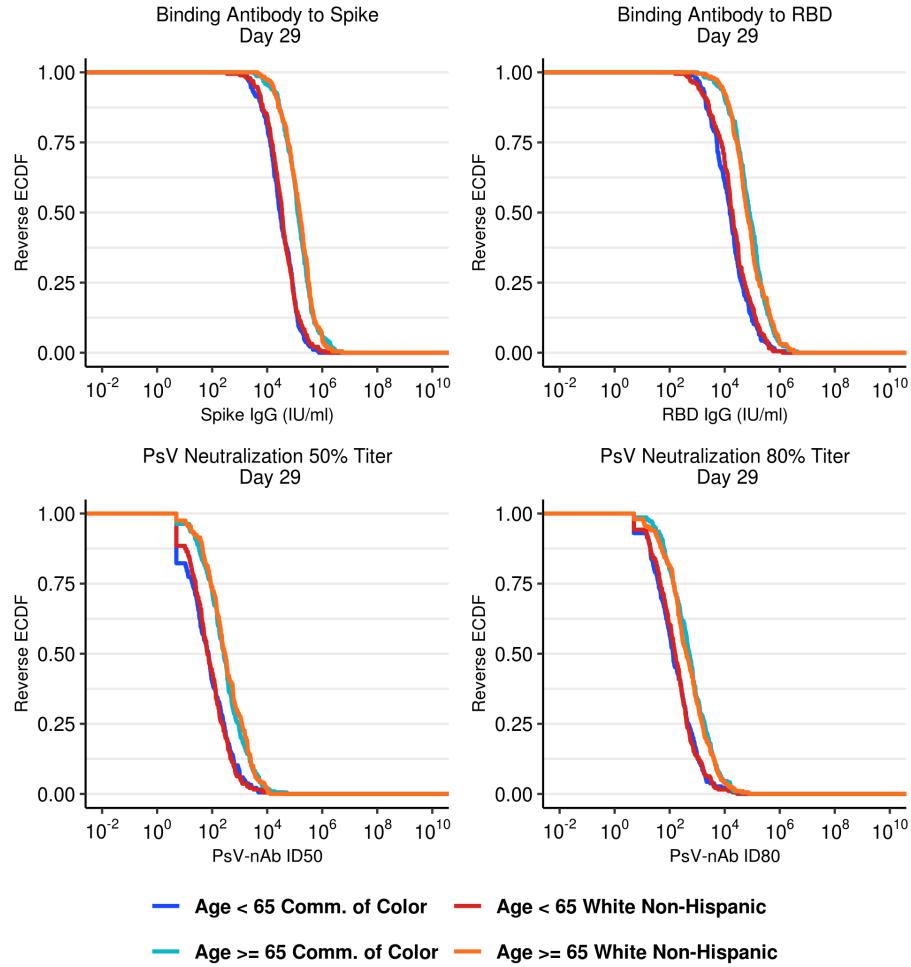


Figure 1.79: (Mock data) RCDF plots for D29 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT93

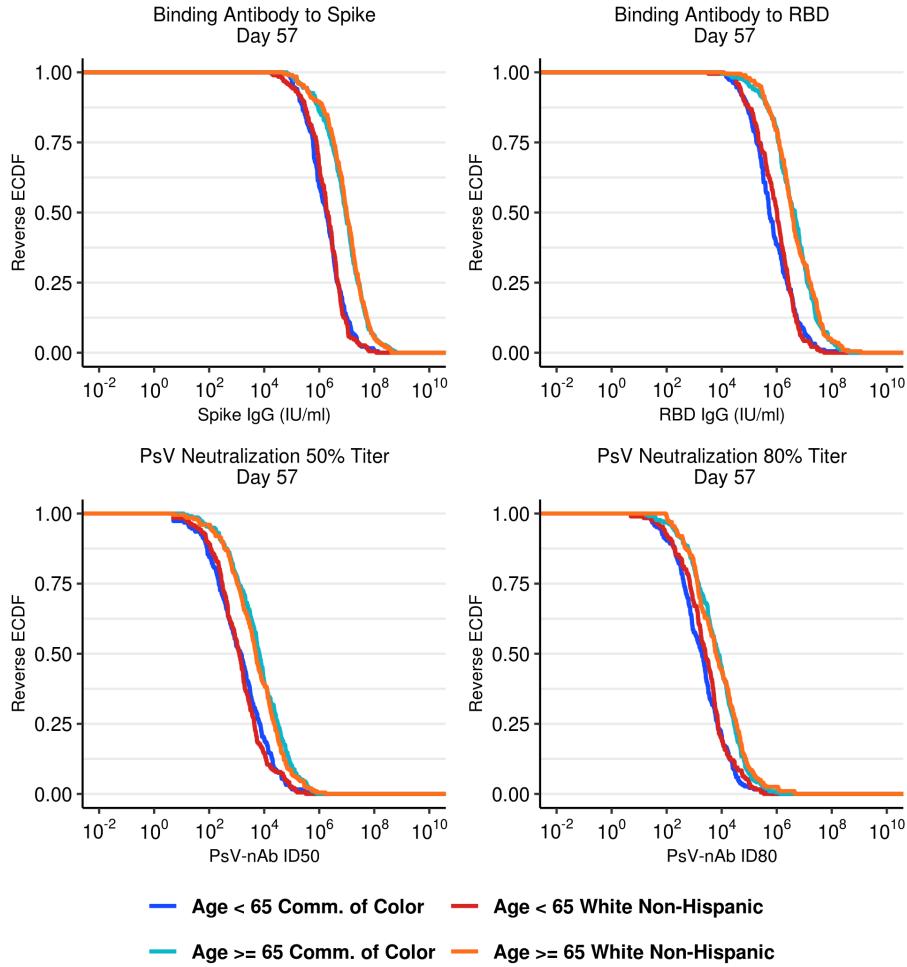


Figure 1.80: (Mock data) RCDF plots for D57 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

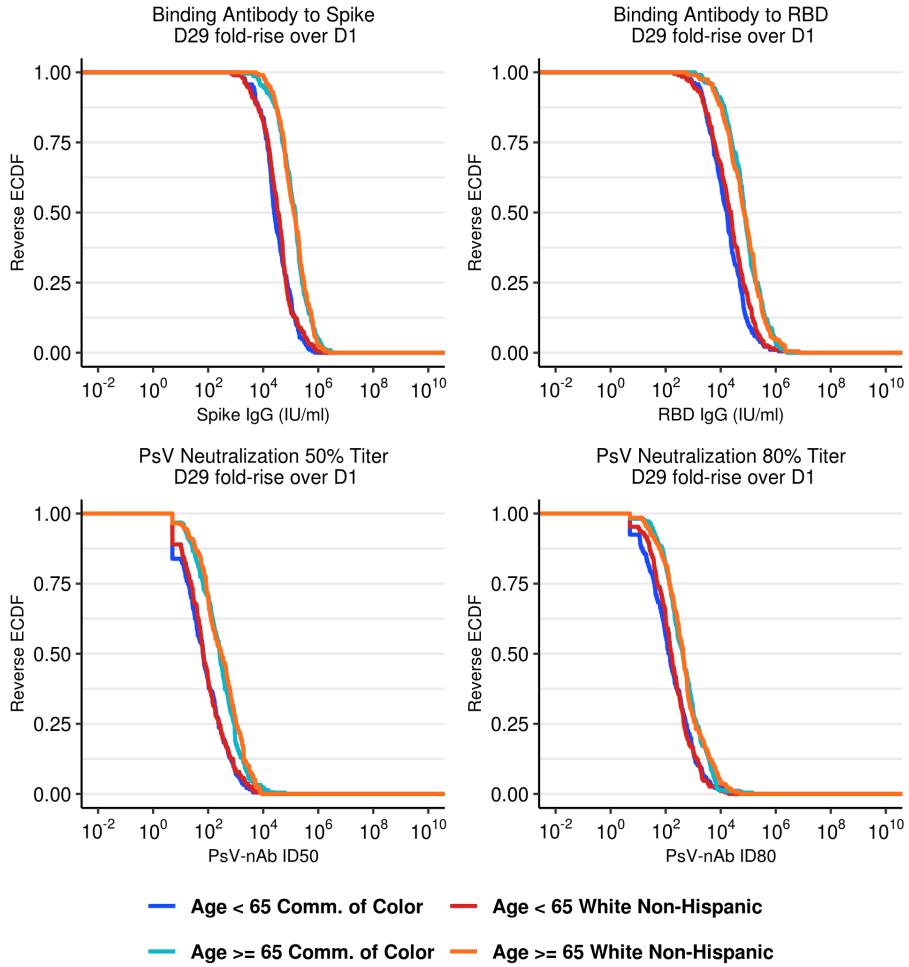


Figure 1.81: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT95

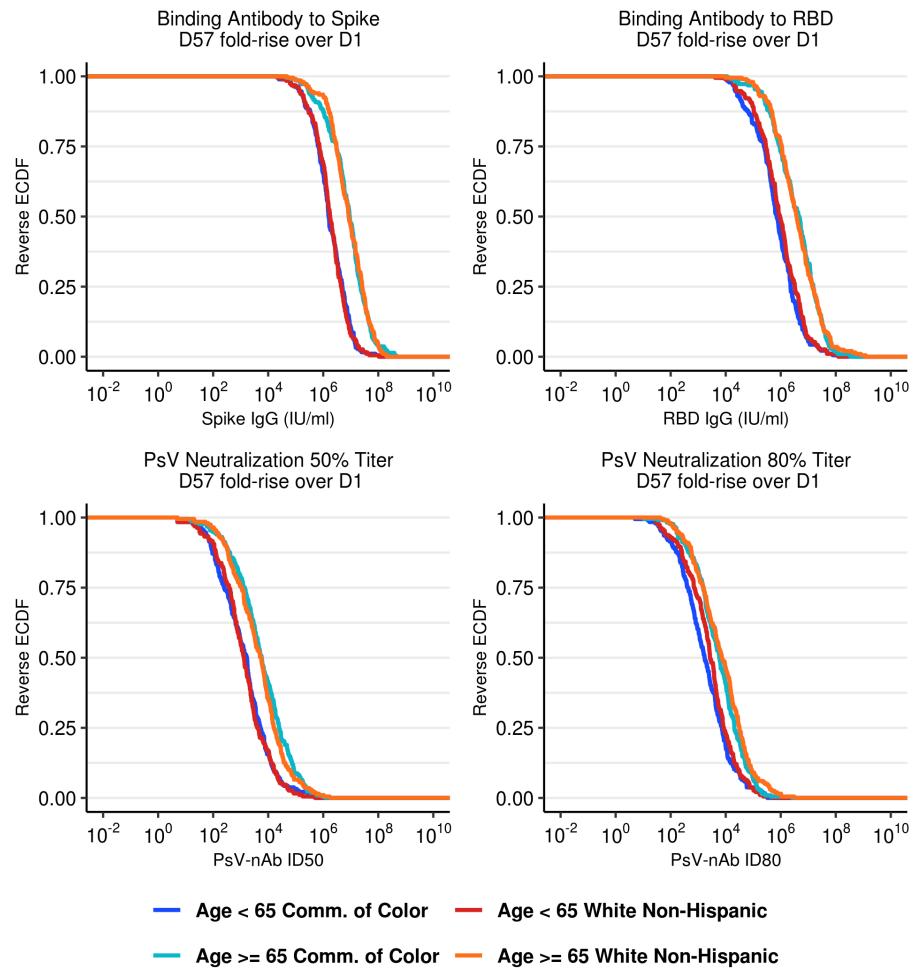


Figure 1.82: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

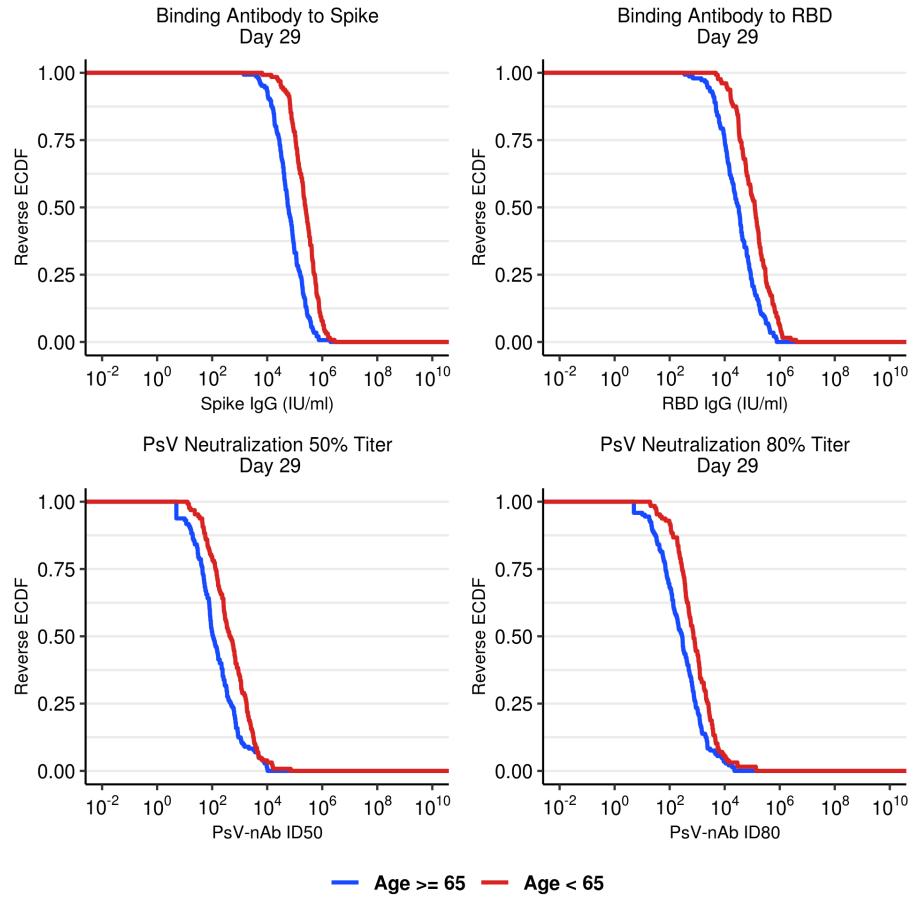


Figure 1.83: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age groups.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT97

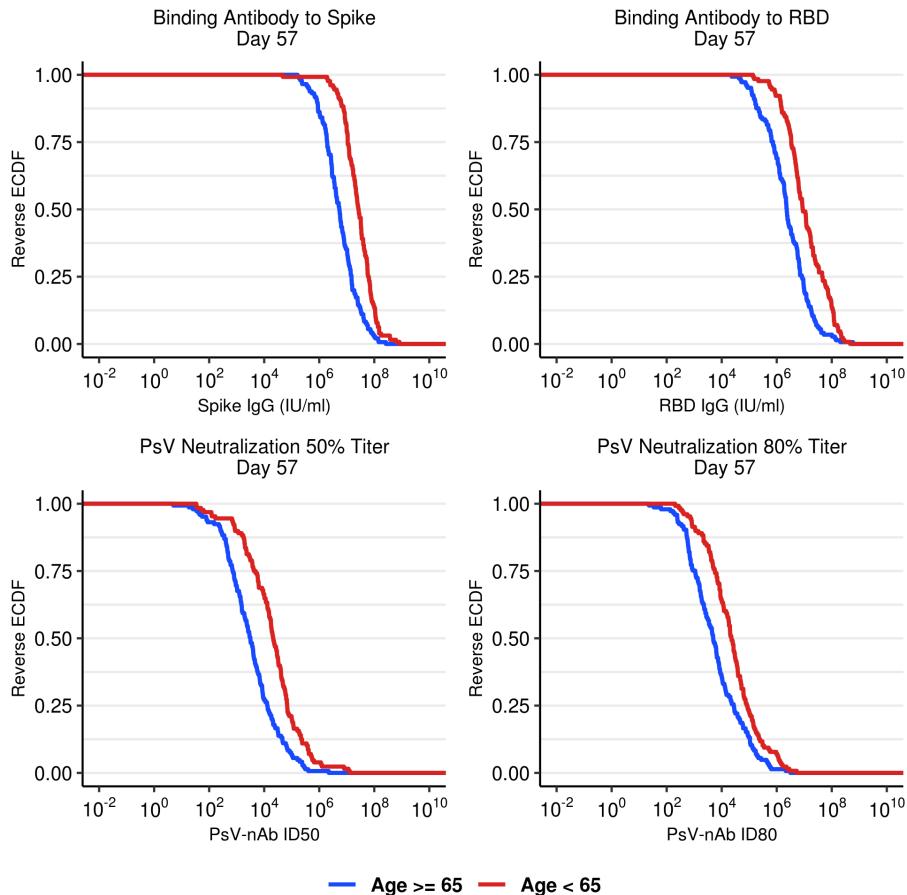


Figure 1.84: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age groups.

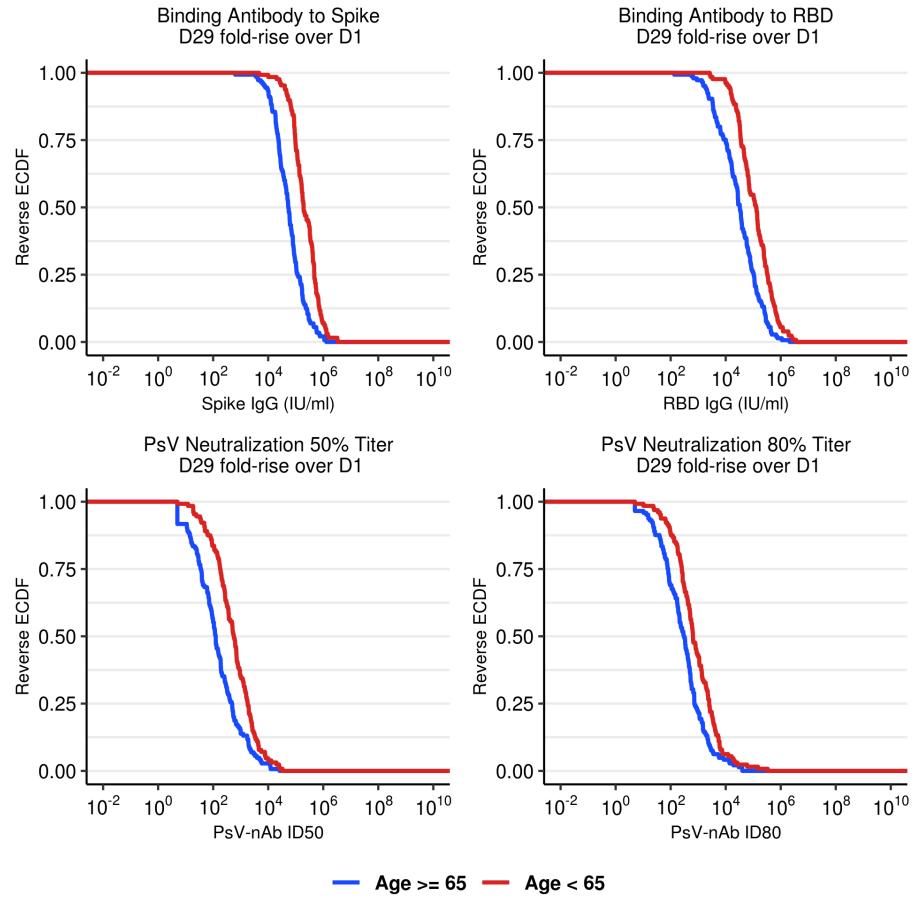


Figure 1.85: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age groups.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT99

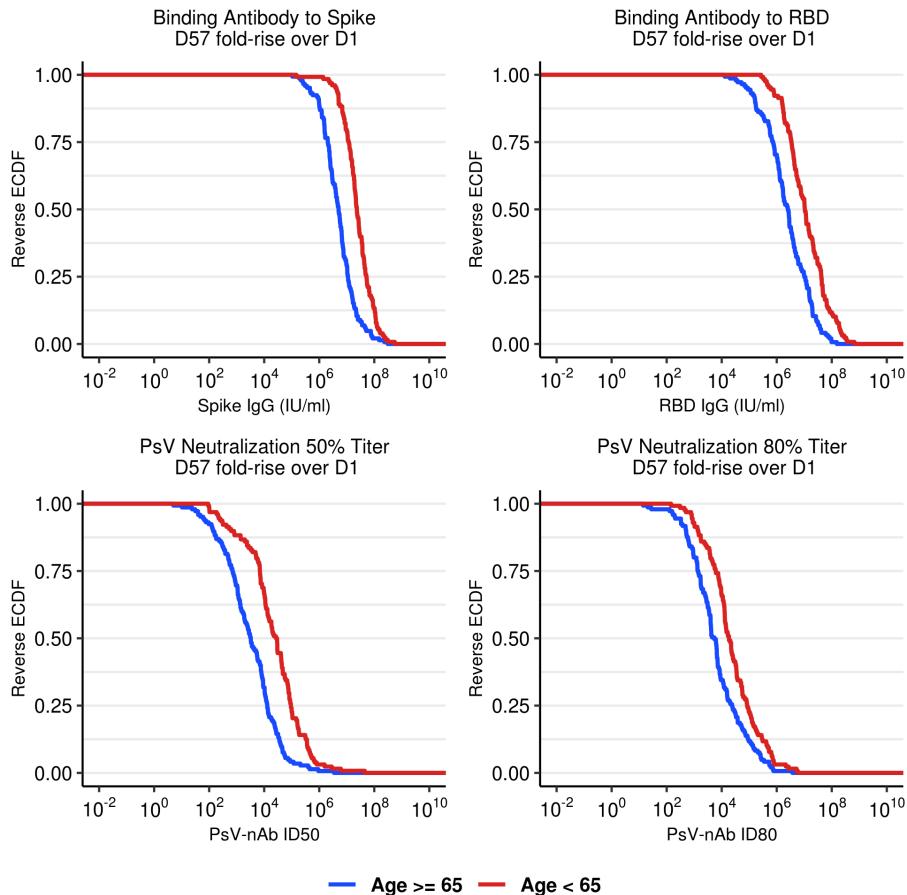


Figure 1.86: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age groups.

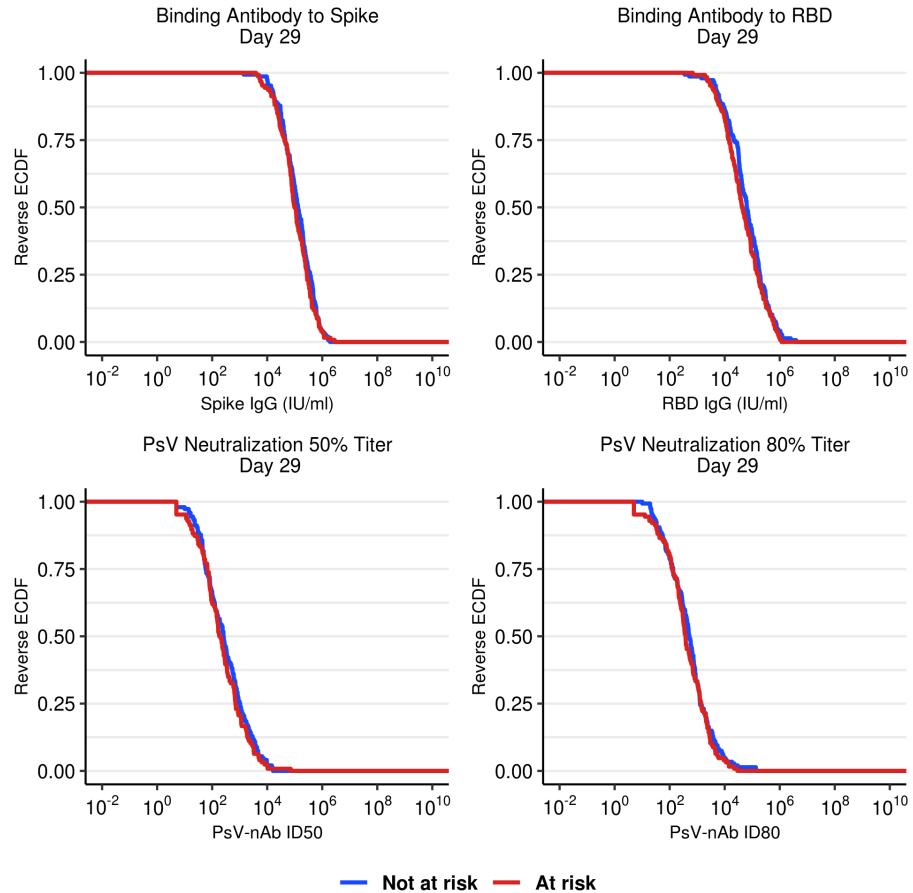


Figure 1.87: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT101

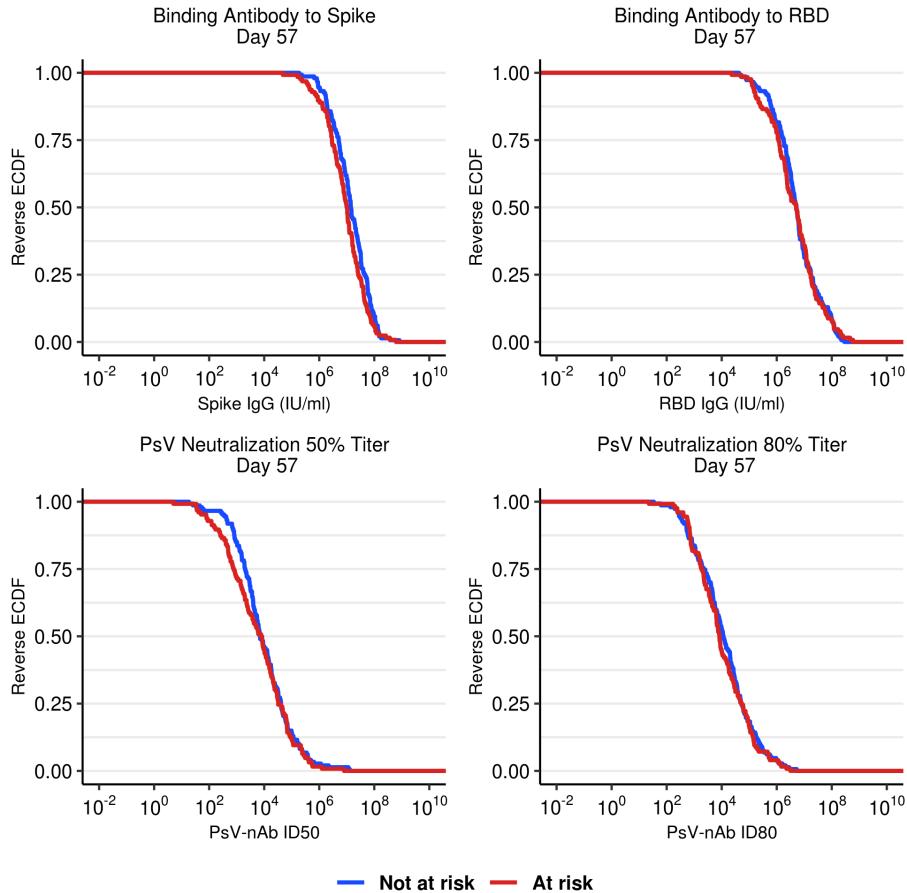


Figure 1.88: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by high-risk condition.

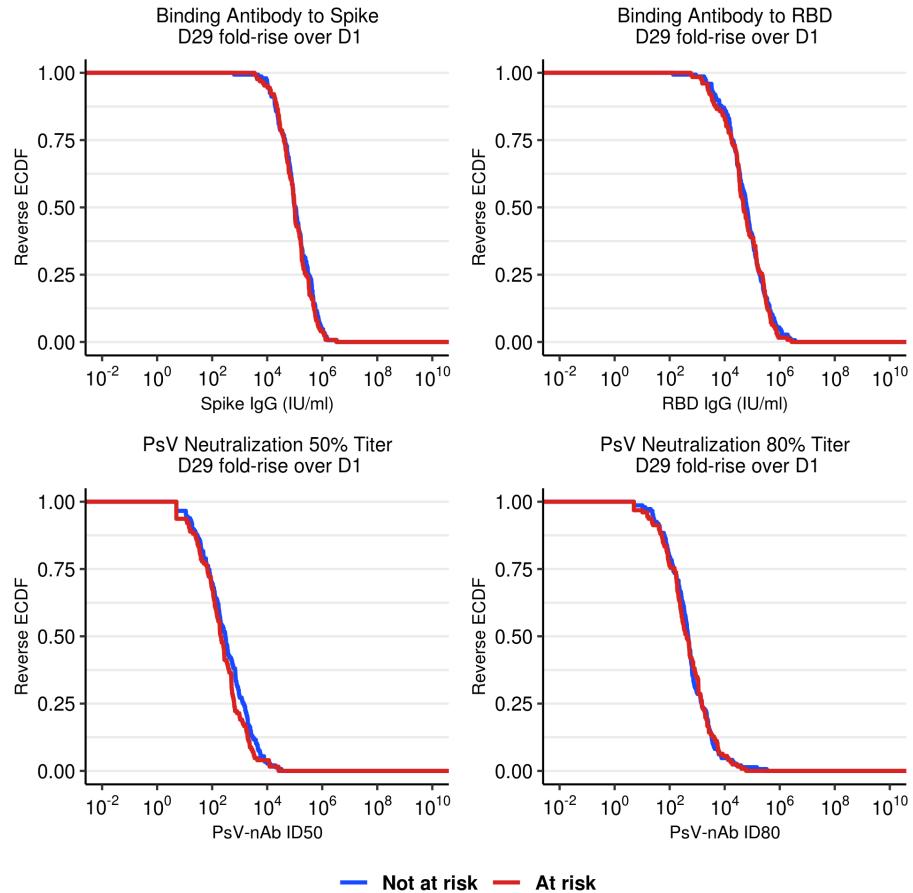


Figure 1.89: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT103

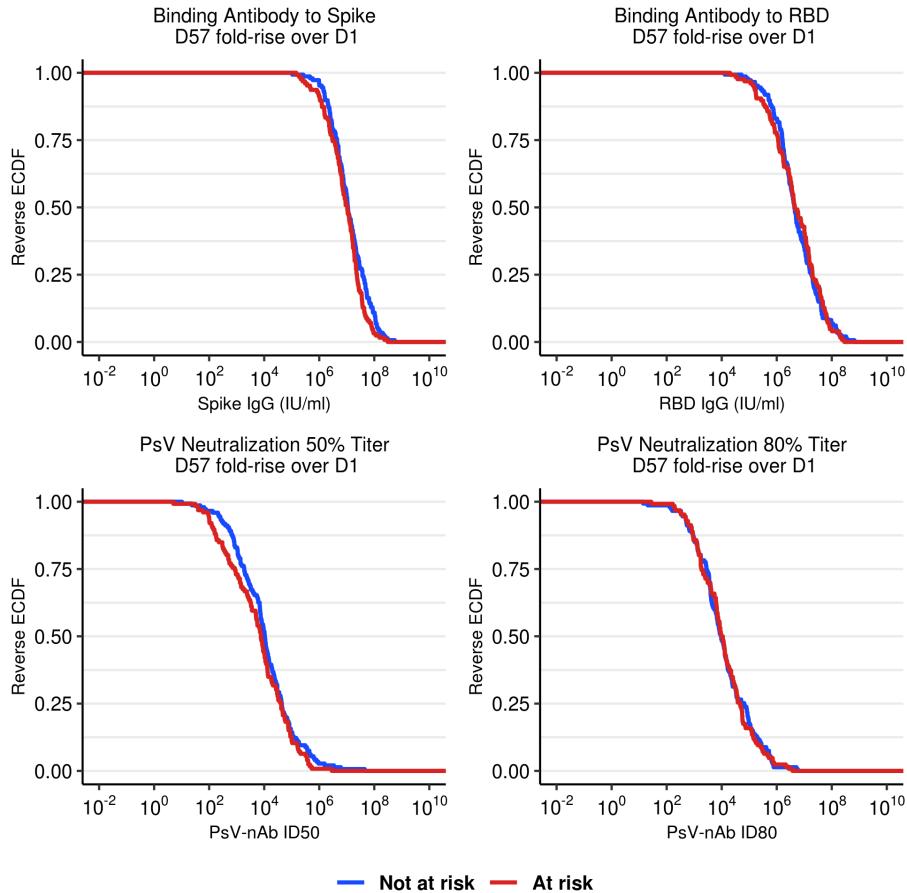


Figure 1.90: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition.

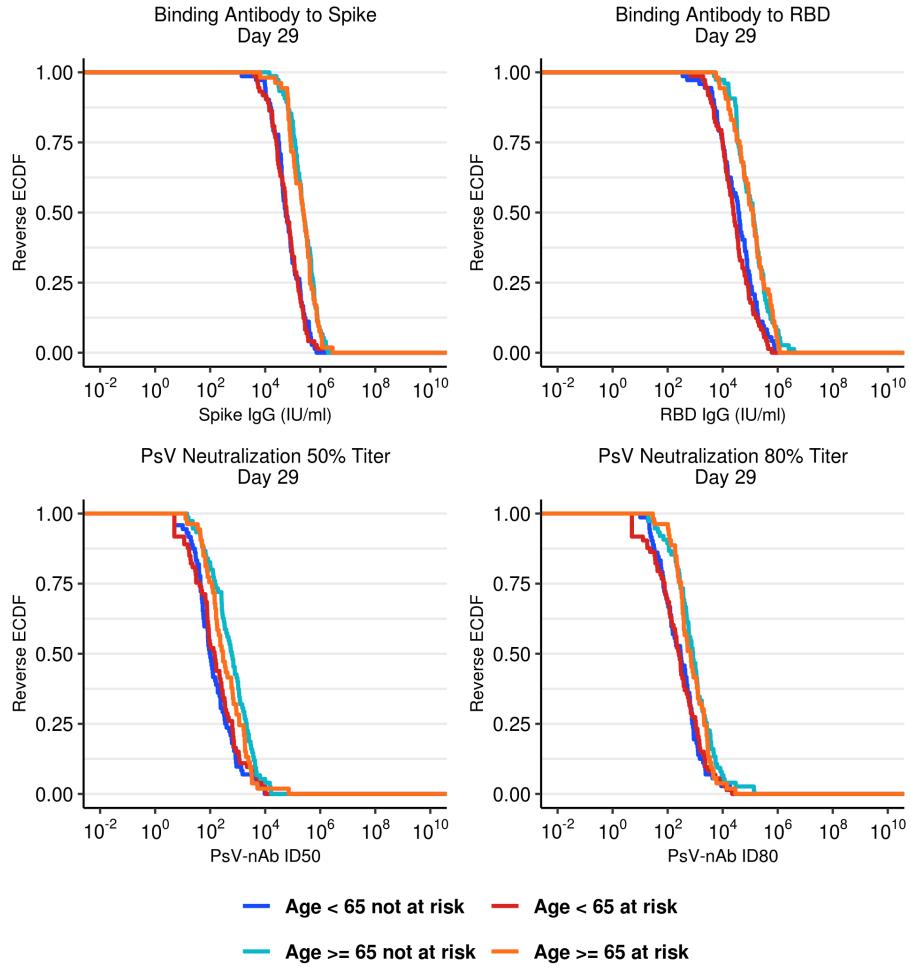


Figure 1.91: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT105

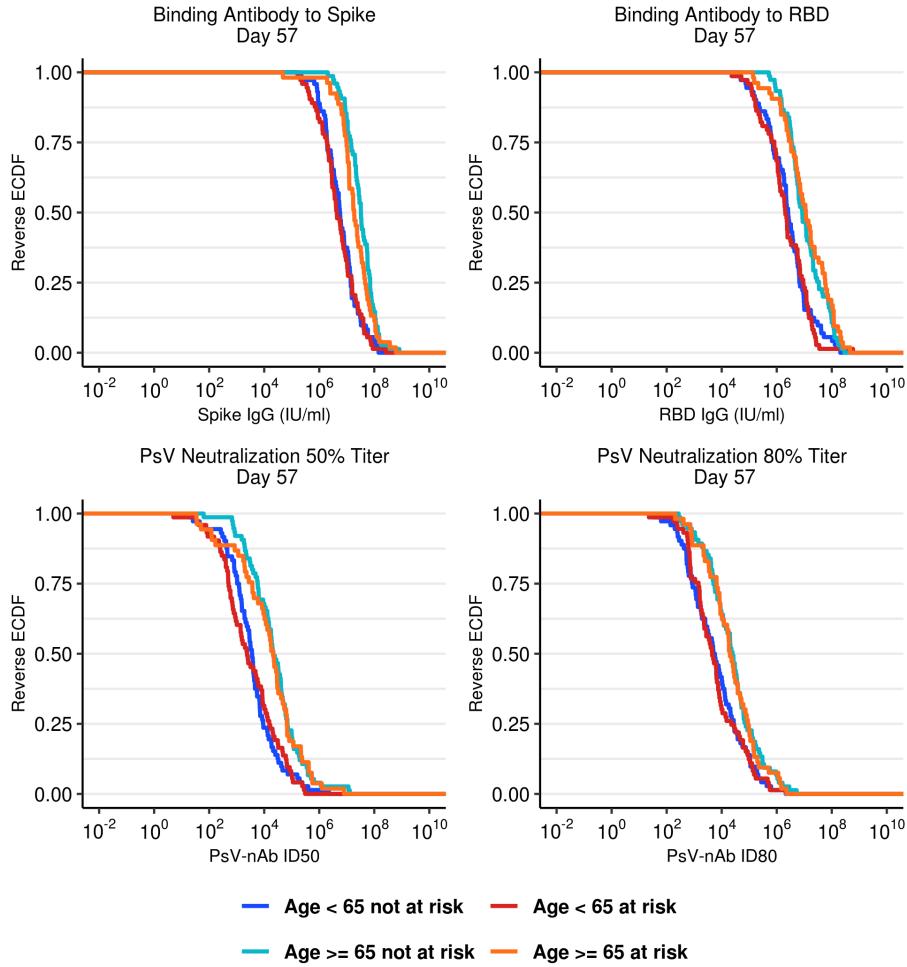


Figure 1.92: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and high-risk condition.

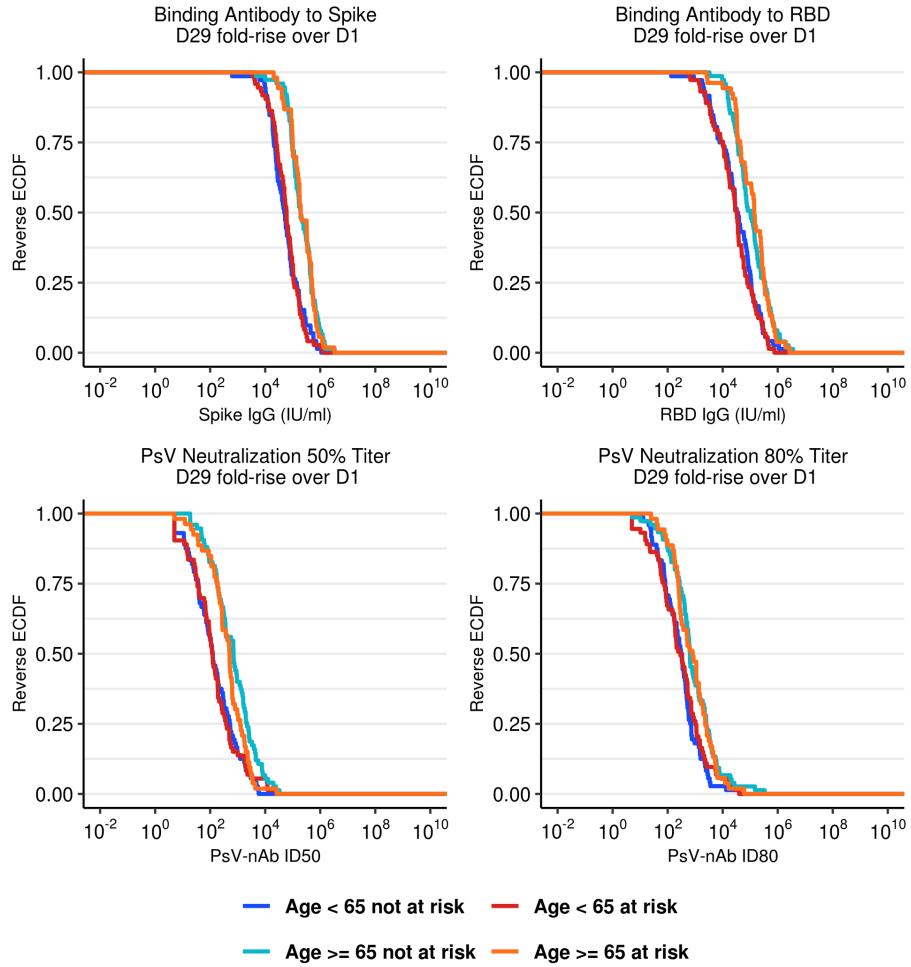


Figure 1.93: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT107

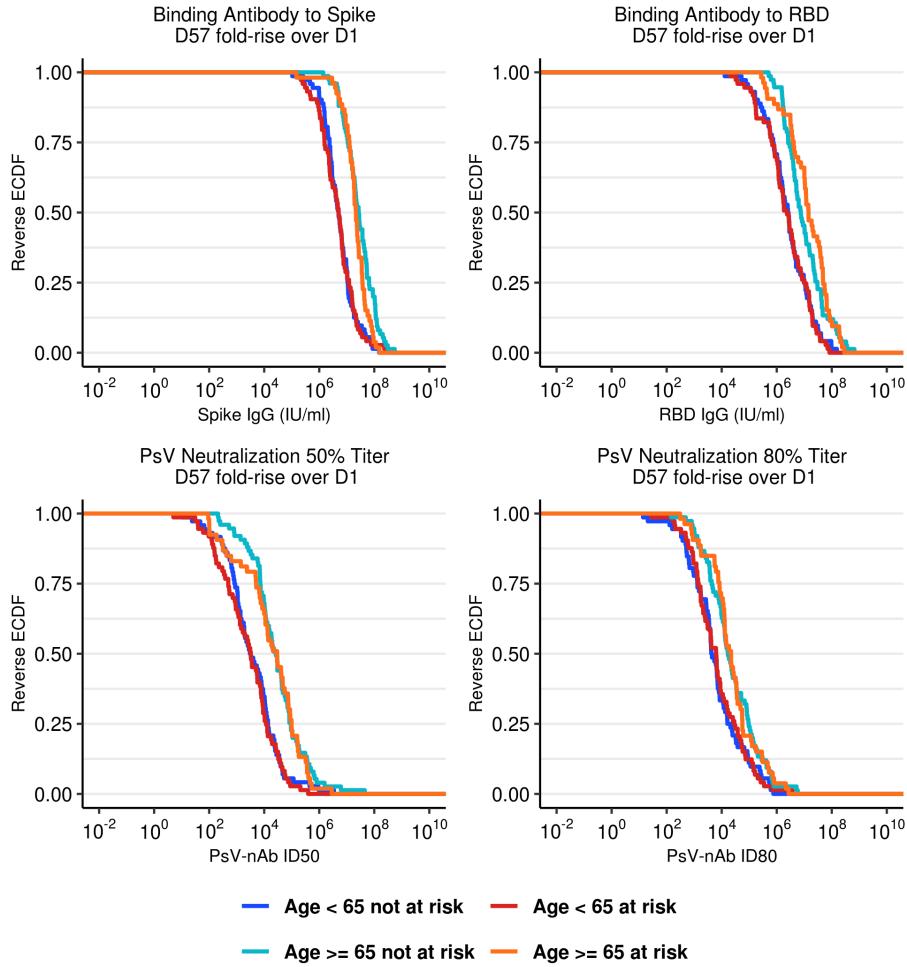


Figure 1.94: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition.

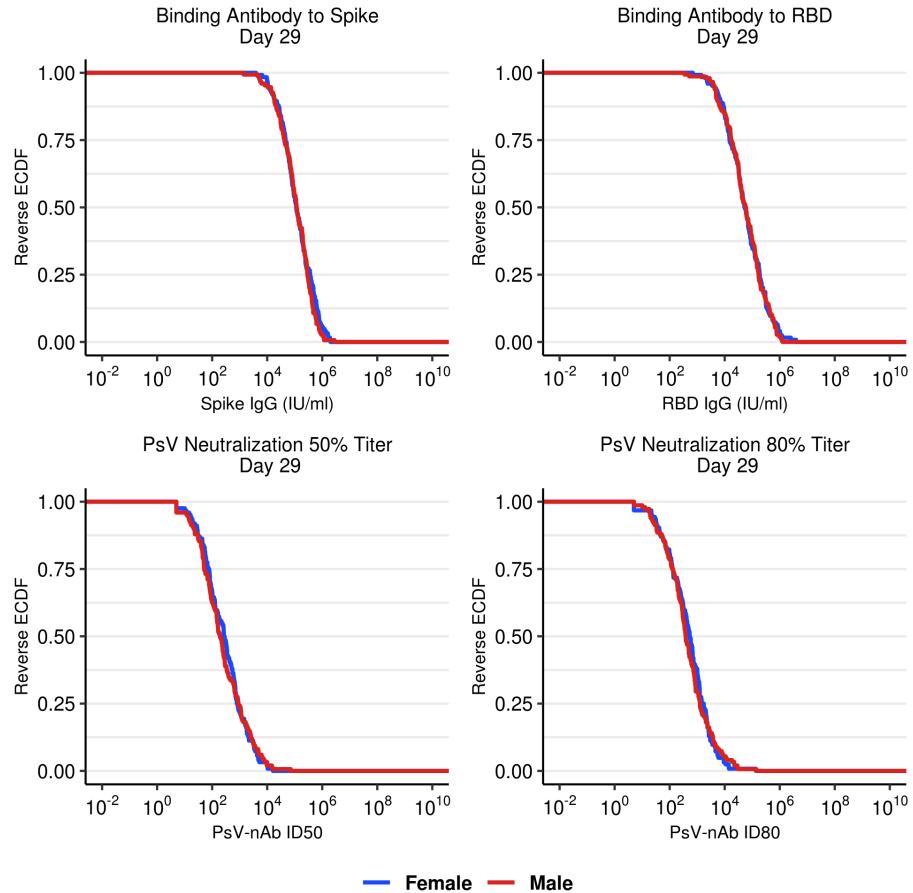


Figure 1.95: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT109

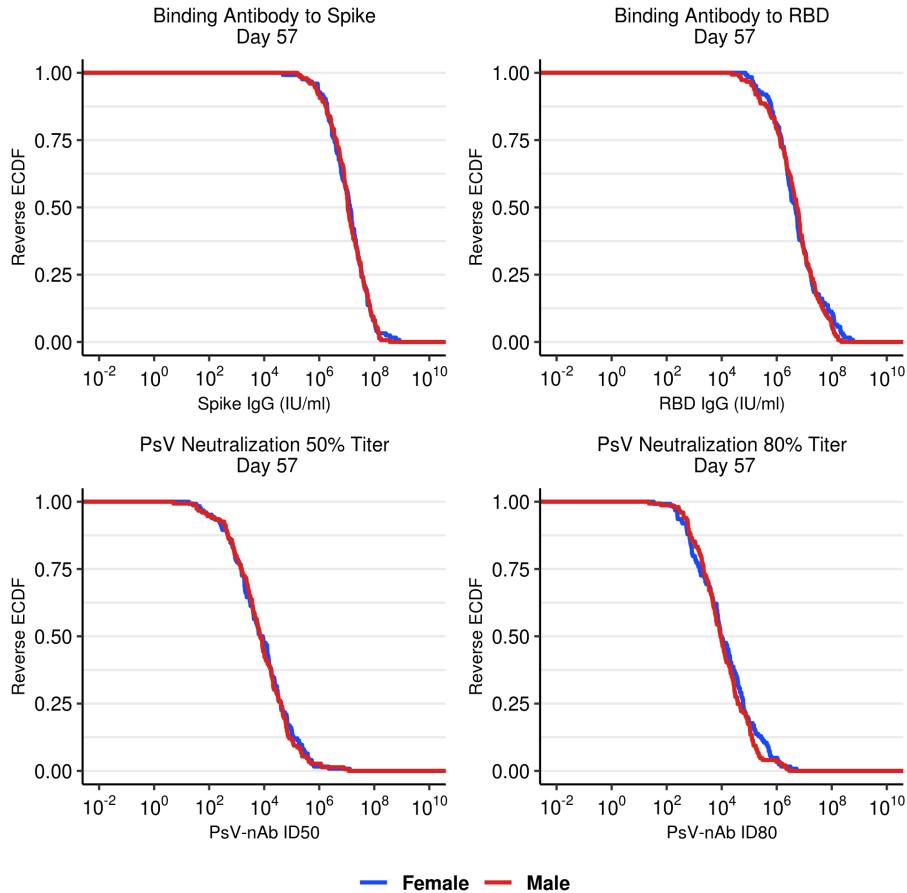


Figure 1.96: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by sex assigned at birth.

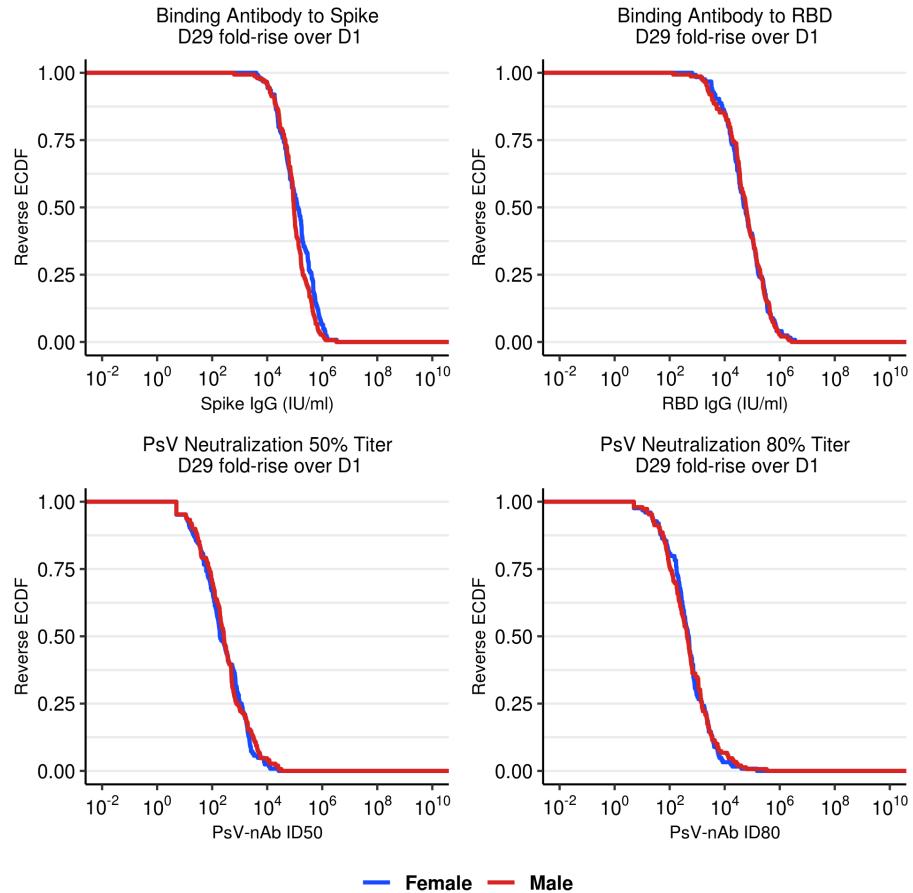


Figure 1.97: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT111

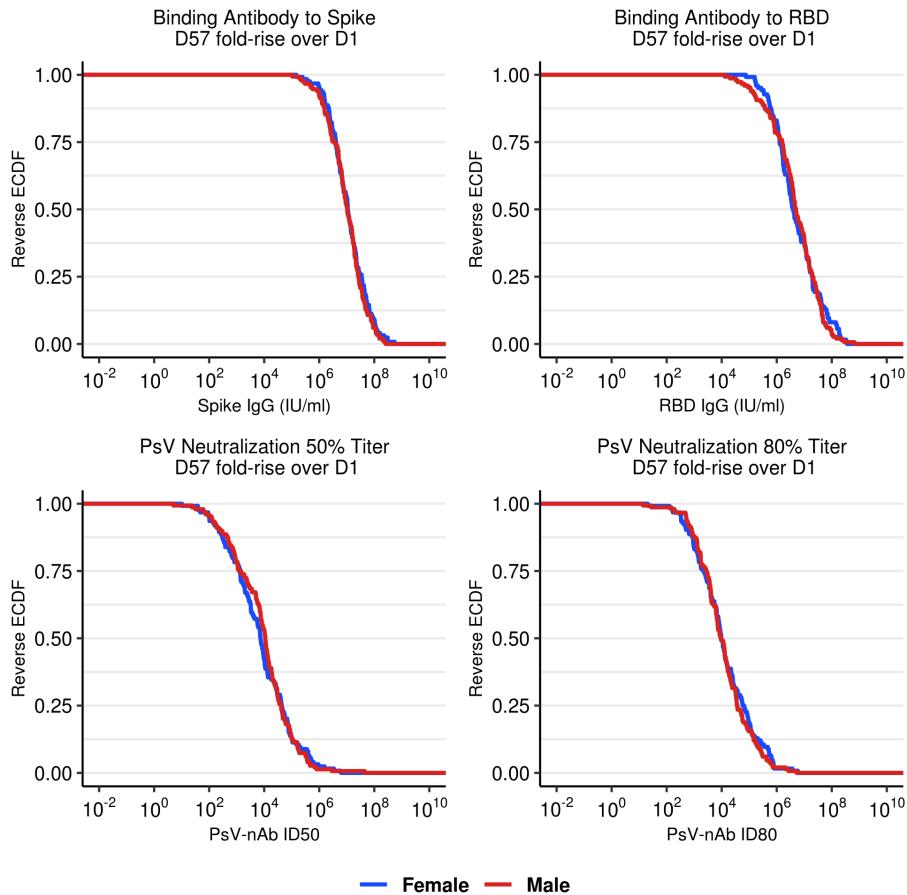


Figure 1.98: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth.

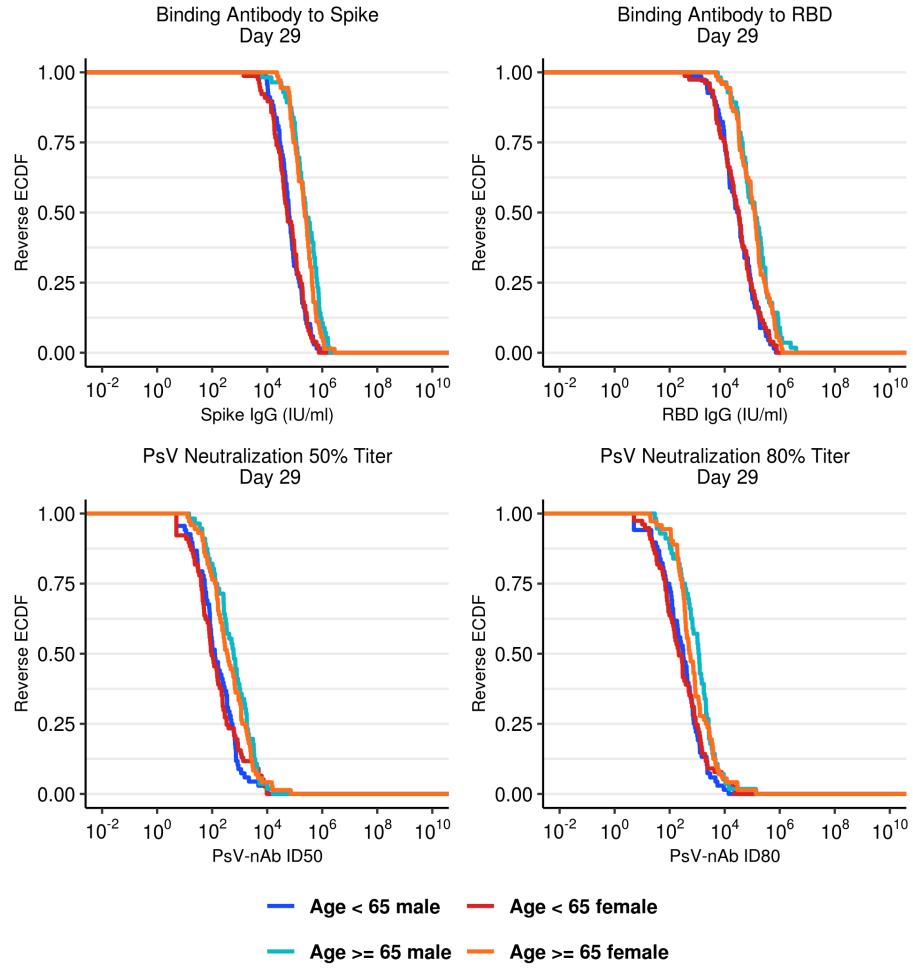


Figure 1.99: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT113

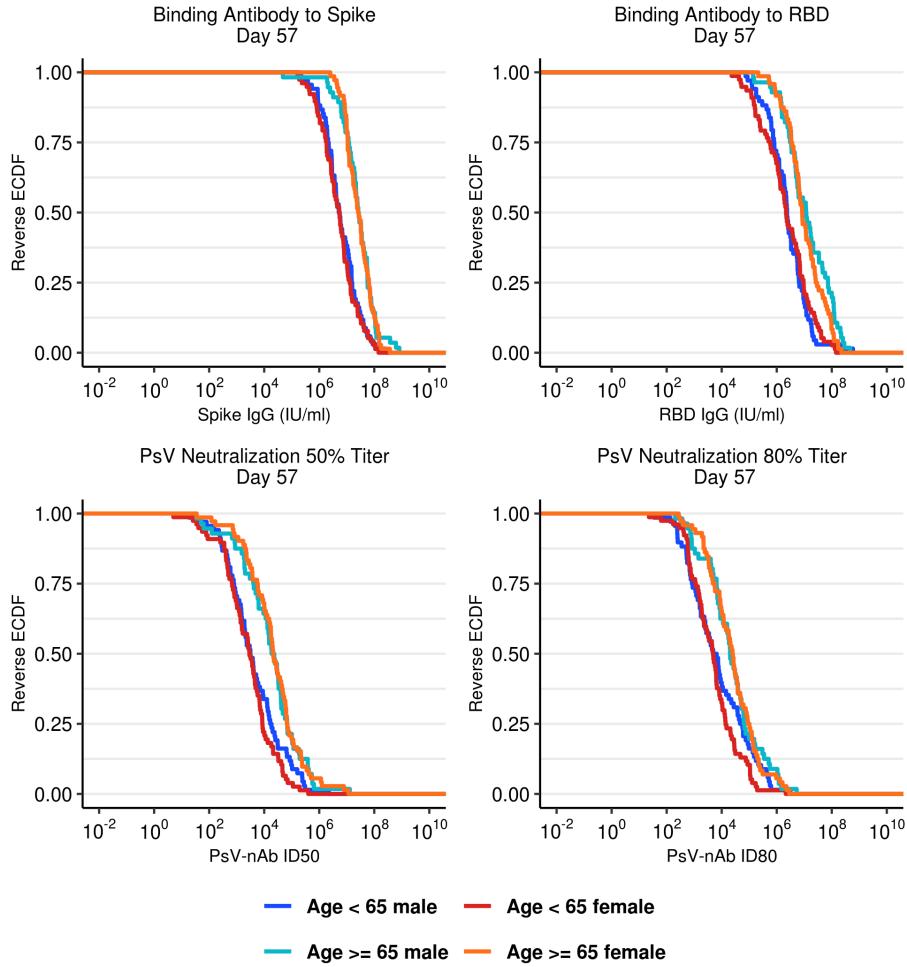


Figure 1.100: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

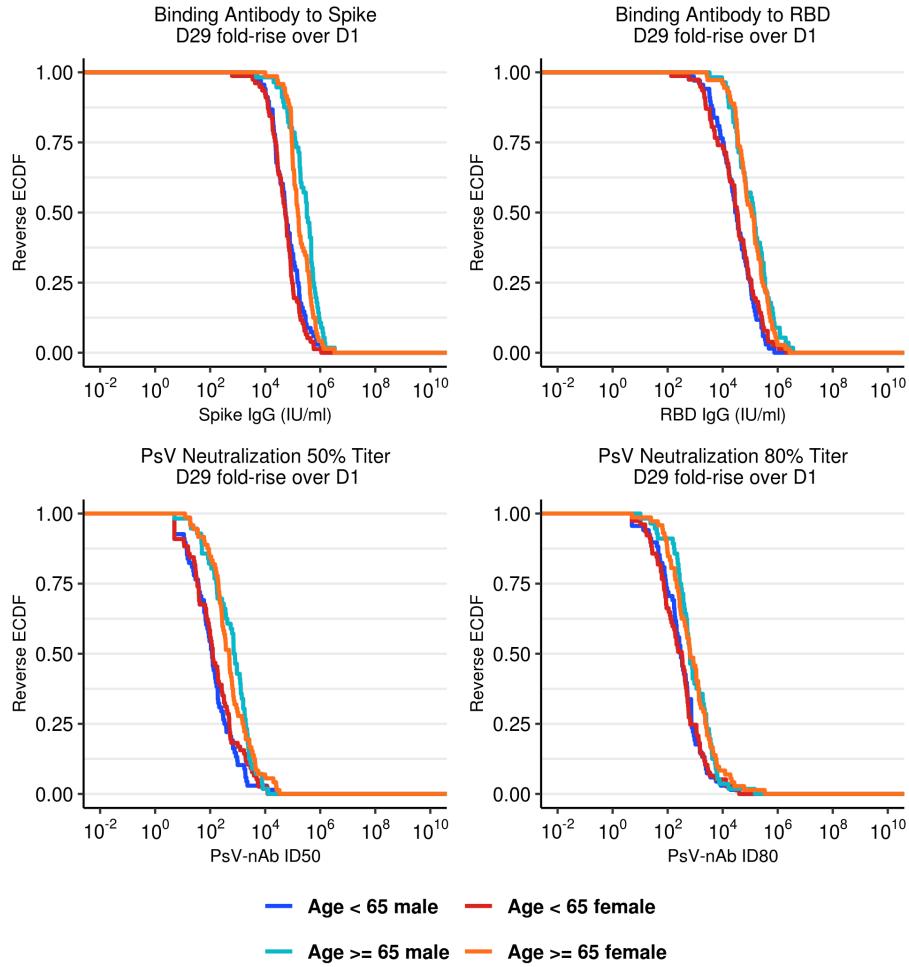


Figure 1.101: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT115

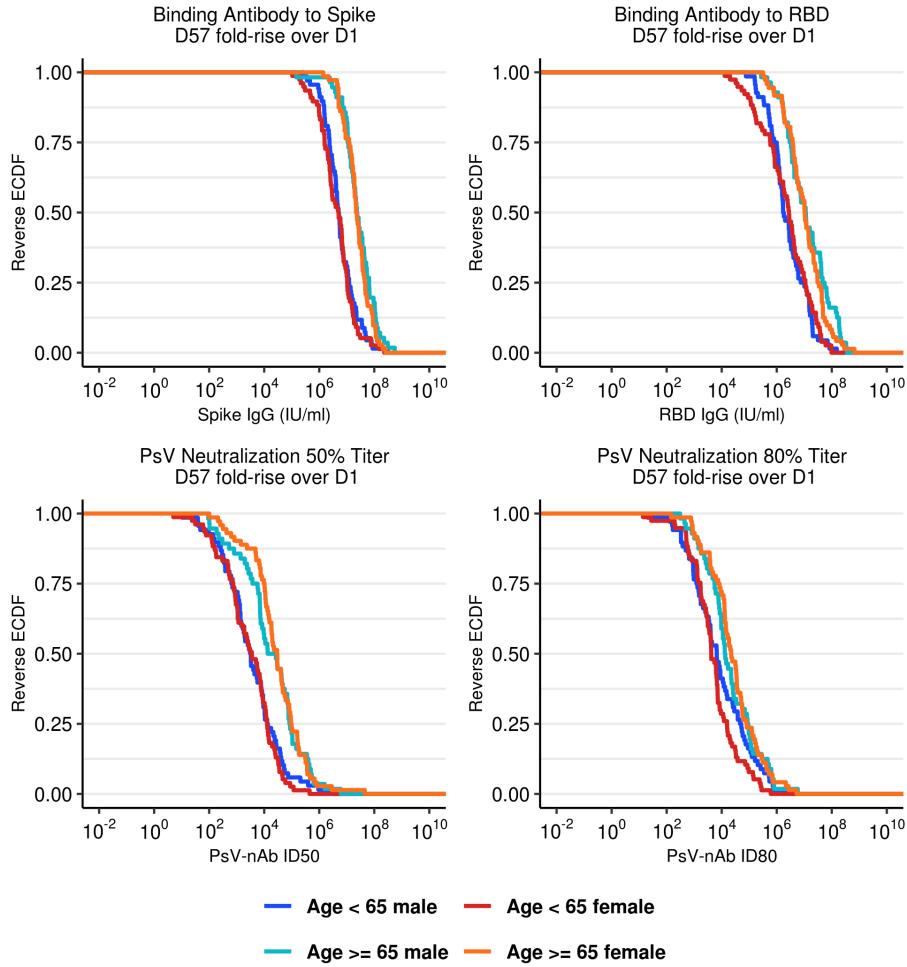


Figure 1.102: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

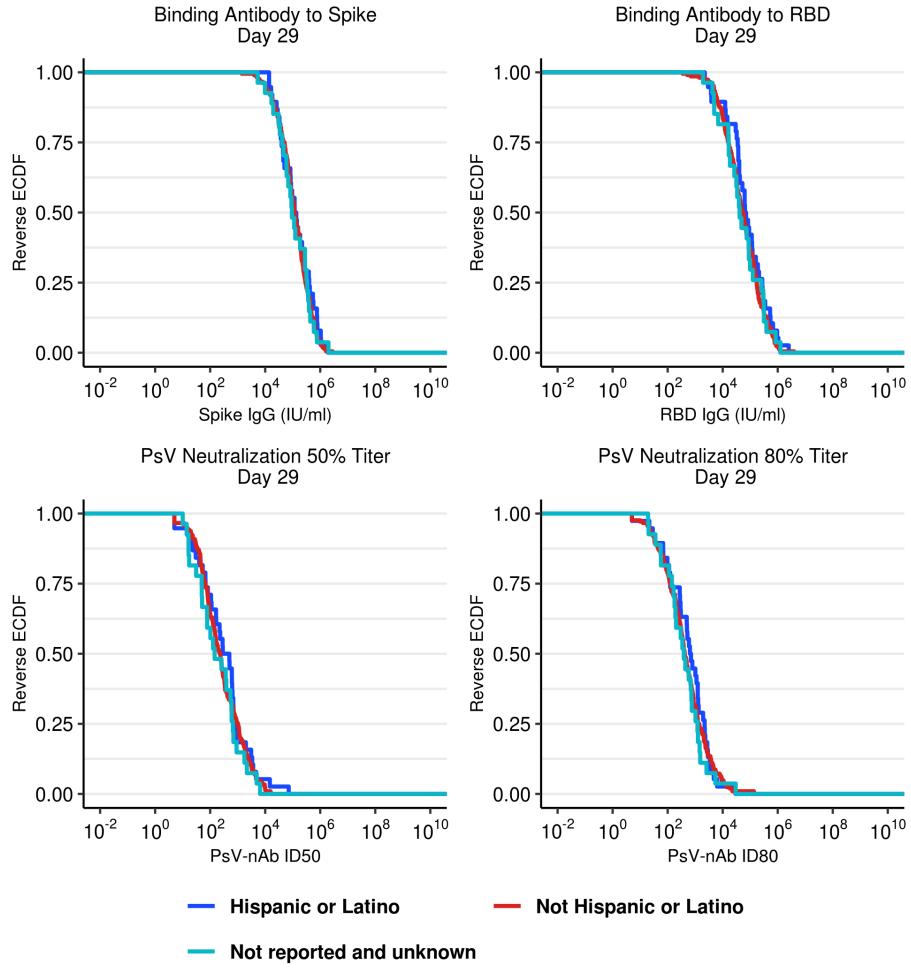


Figure 1.103: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by ethnicity.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT117

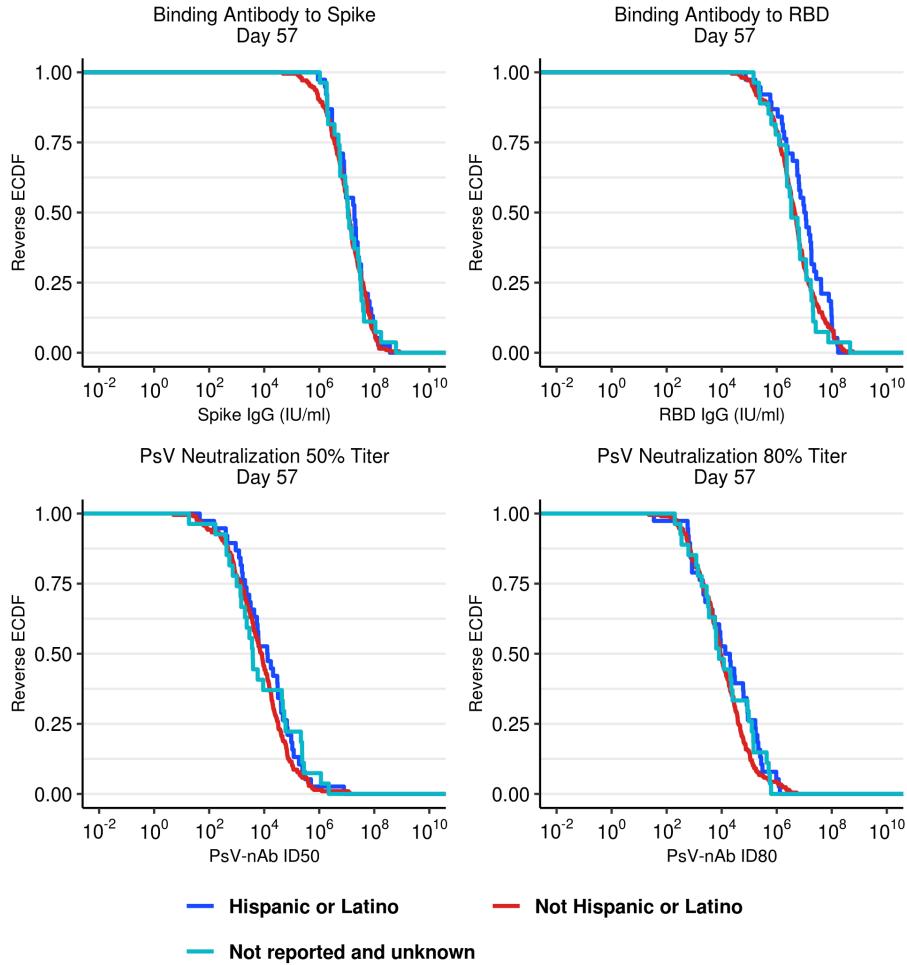


Figure 1.104: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by ethnicity.

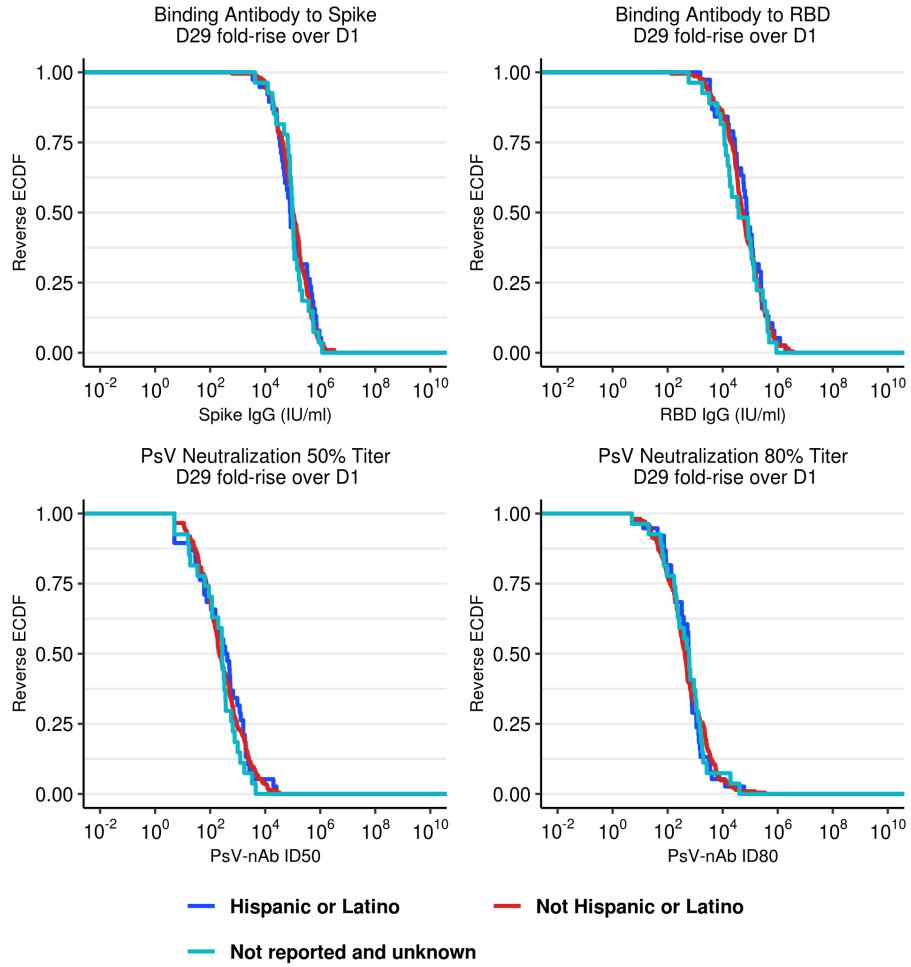


Figure 1.105: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT119

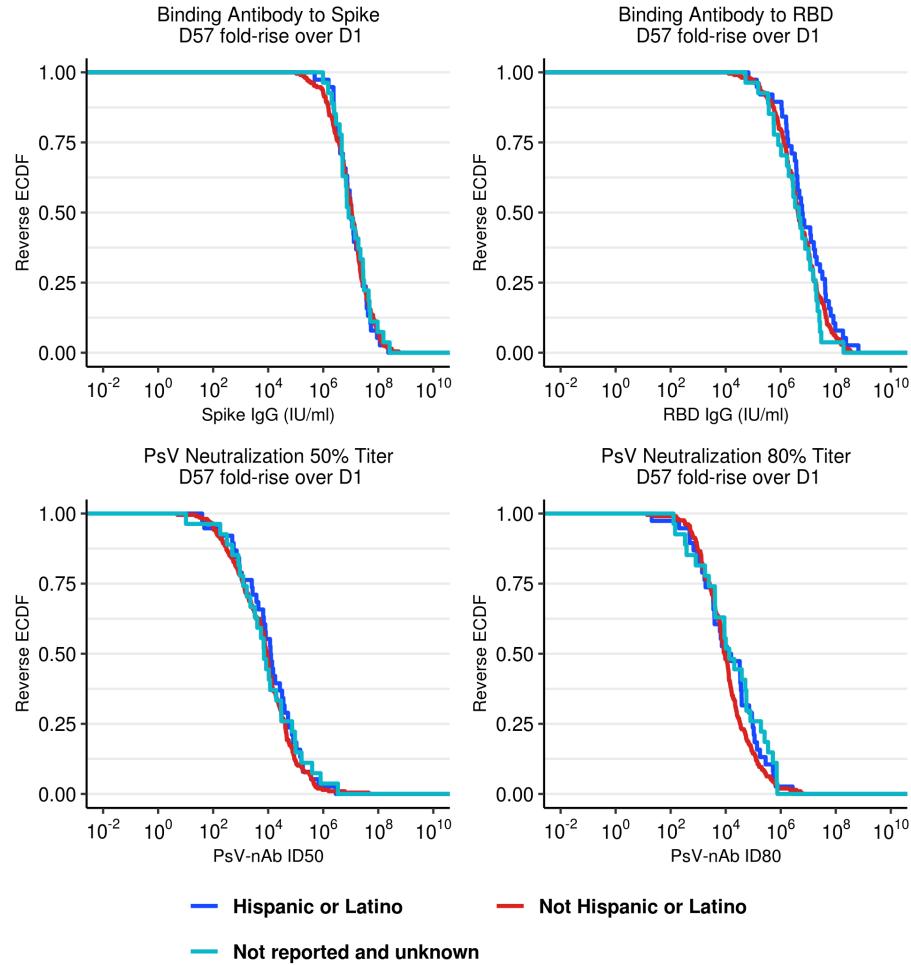


Figure 1.106: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity.

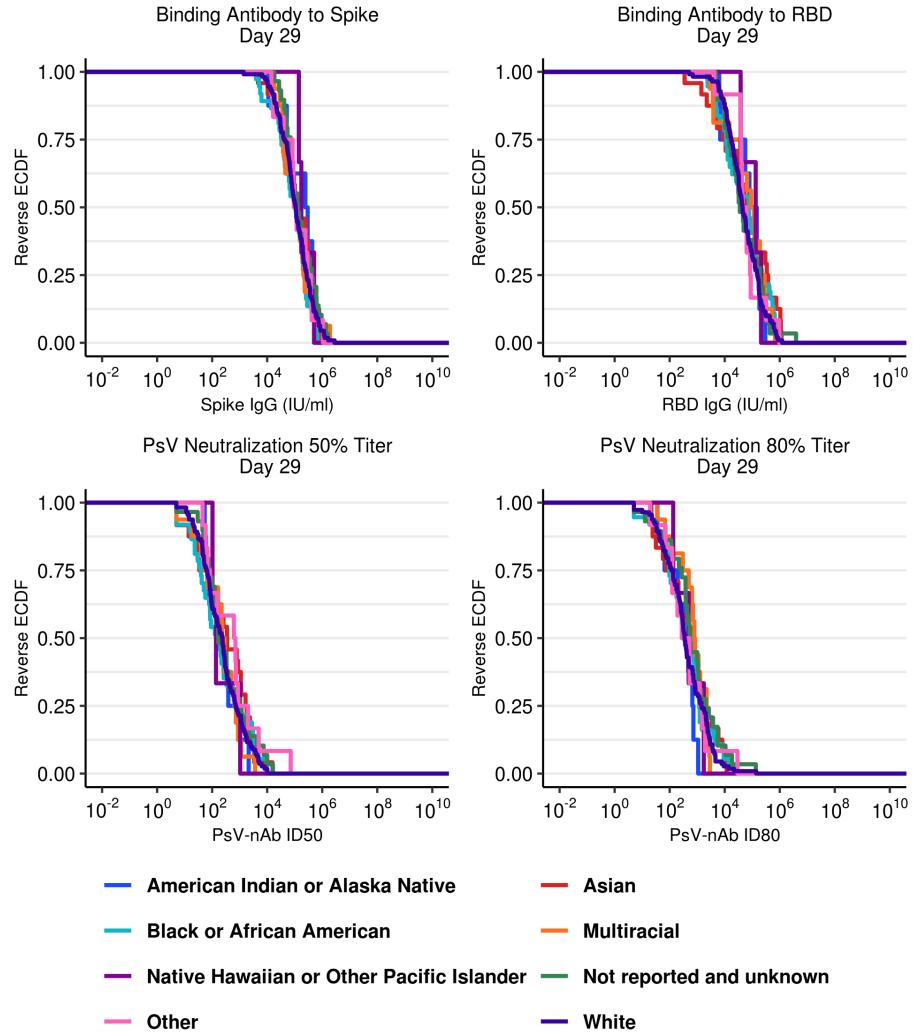


Figure 1.107: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by race.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT121

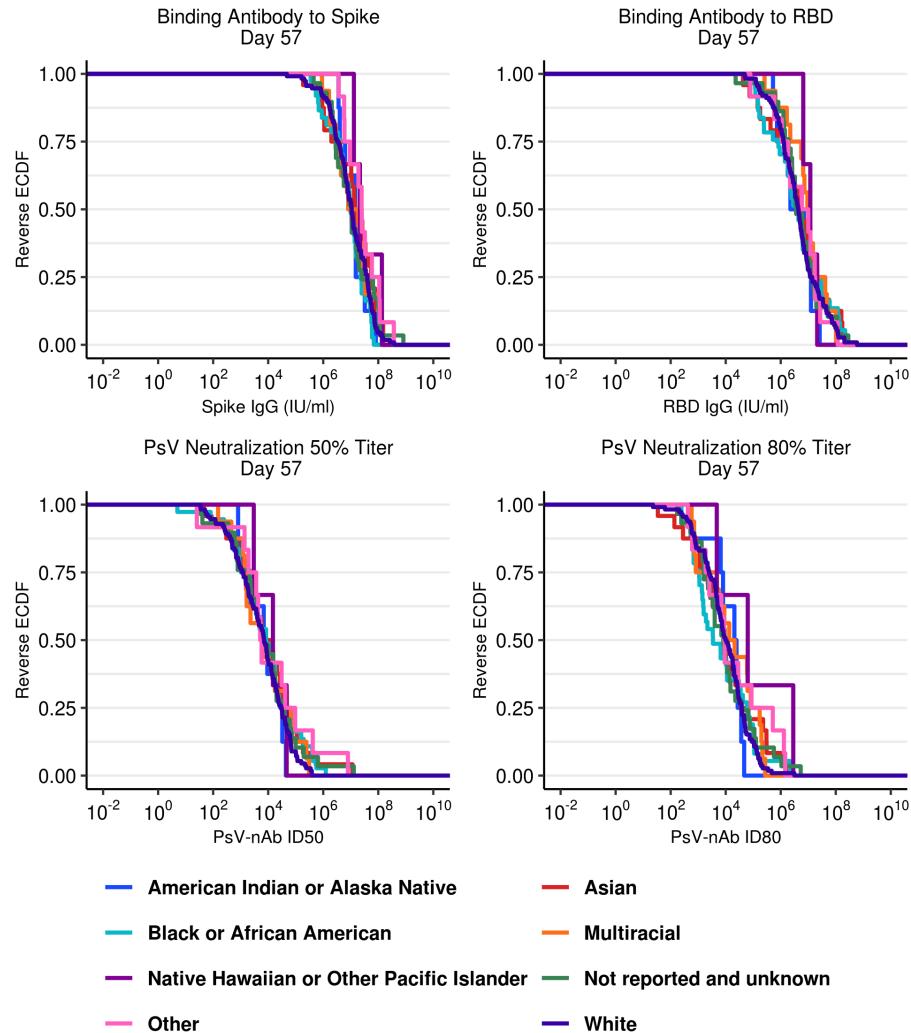


Figure 1.108: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by race.

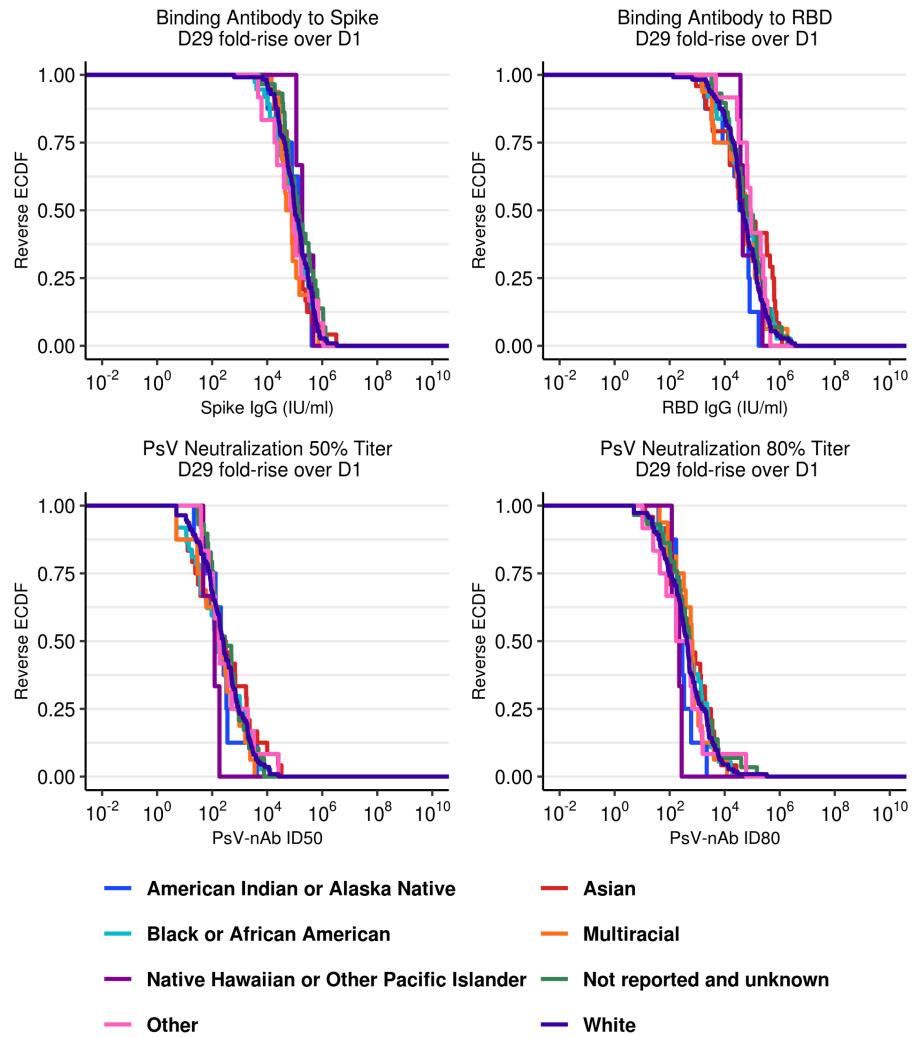


Figure 1.109: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by race.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT123

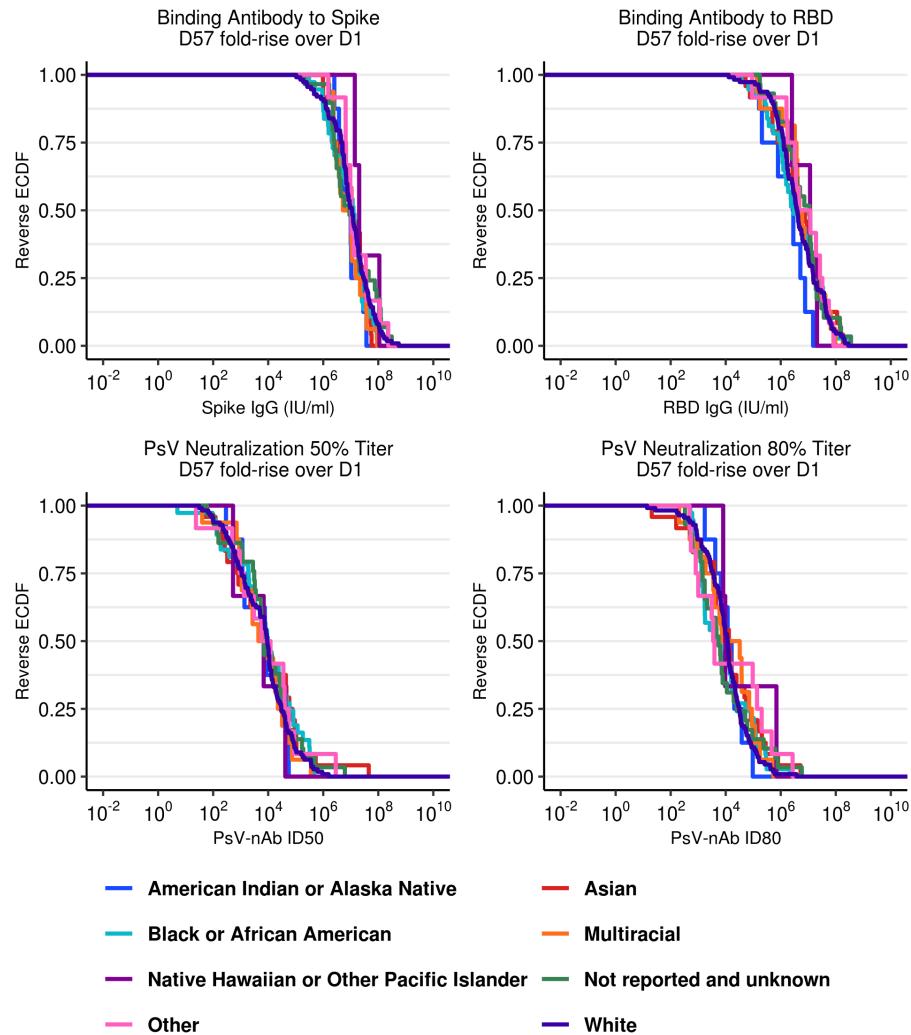


Figure 1.110: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by race.

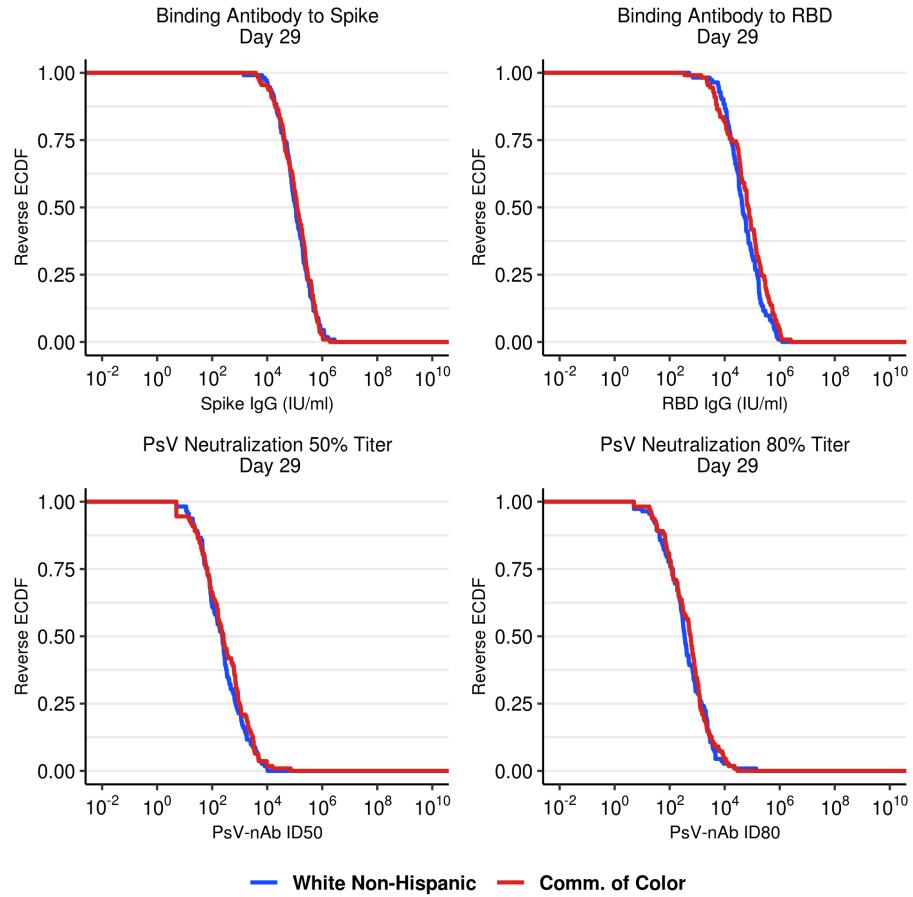


Figure 1.111: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT125

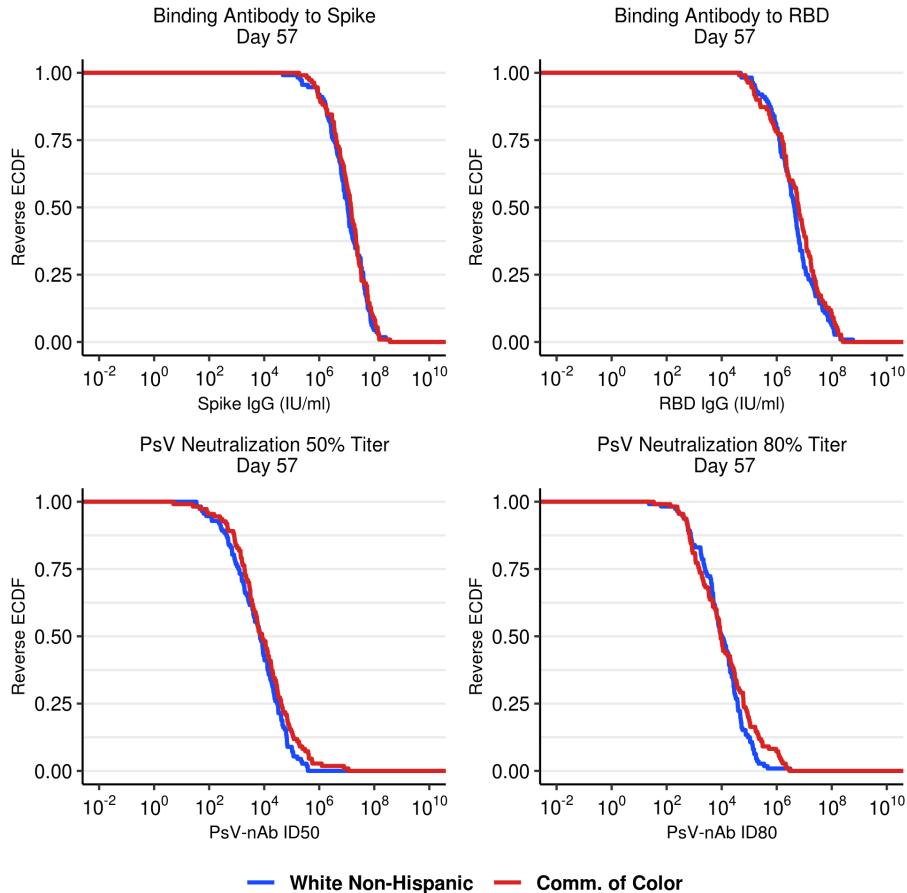


Figure 1.112: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

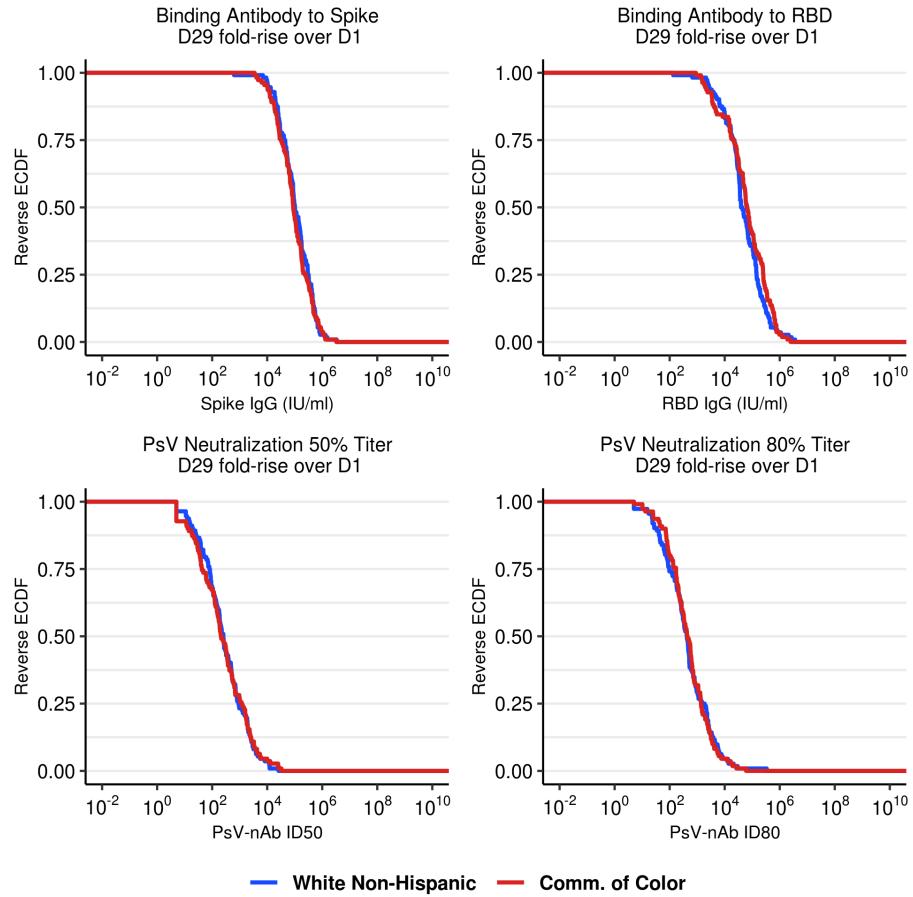


Figure 1.113: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT127

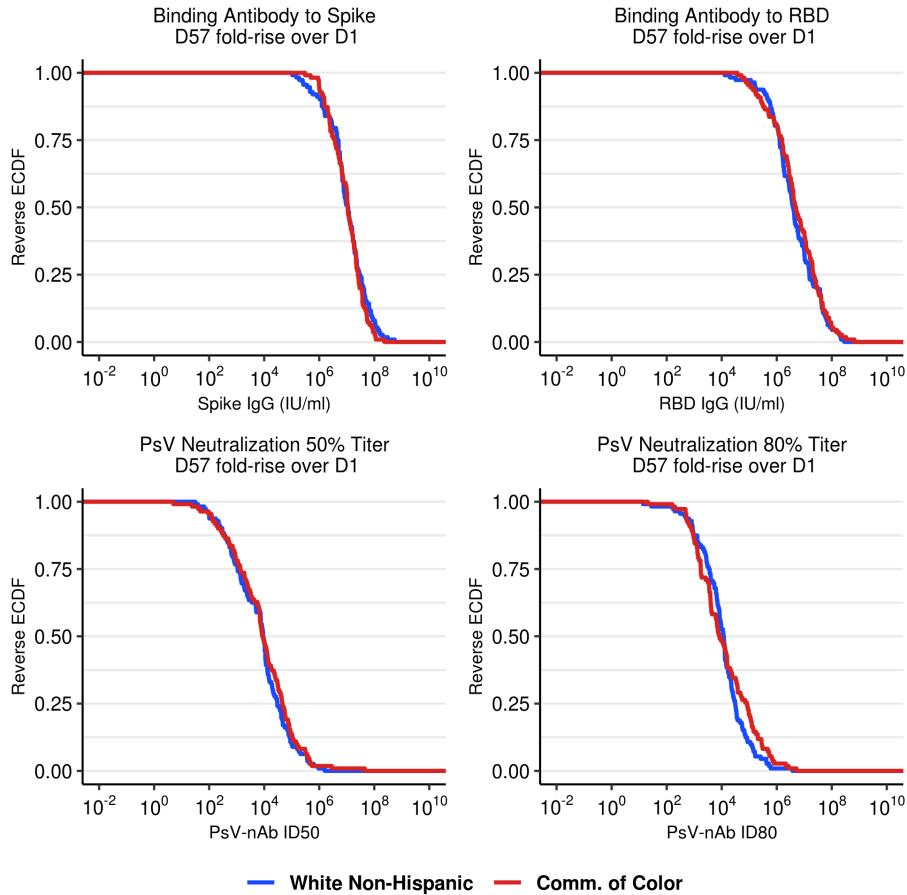


Figure 1.114: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

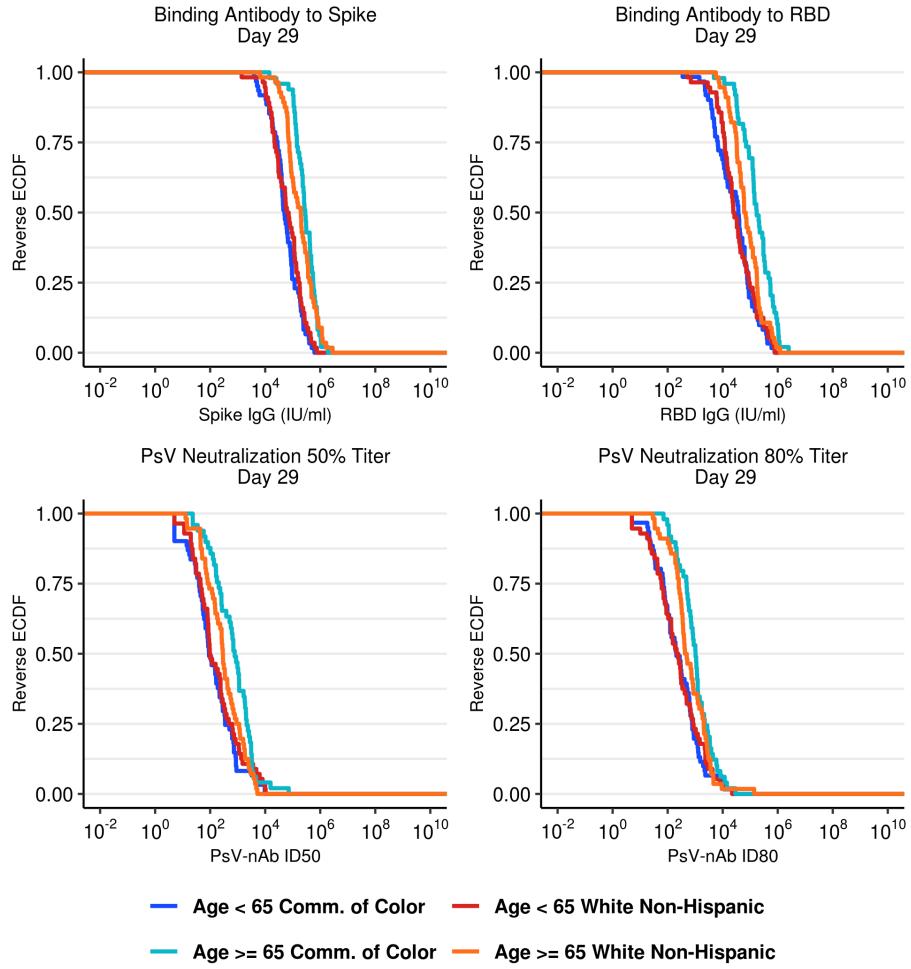


Figure 1.115: (Mock data) RCDF plots for D29 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT129

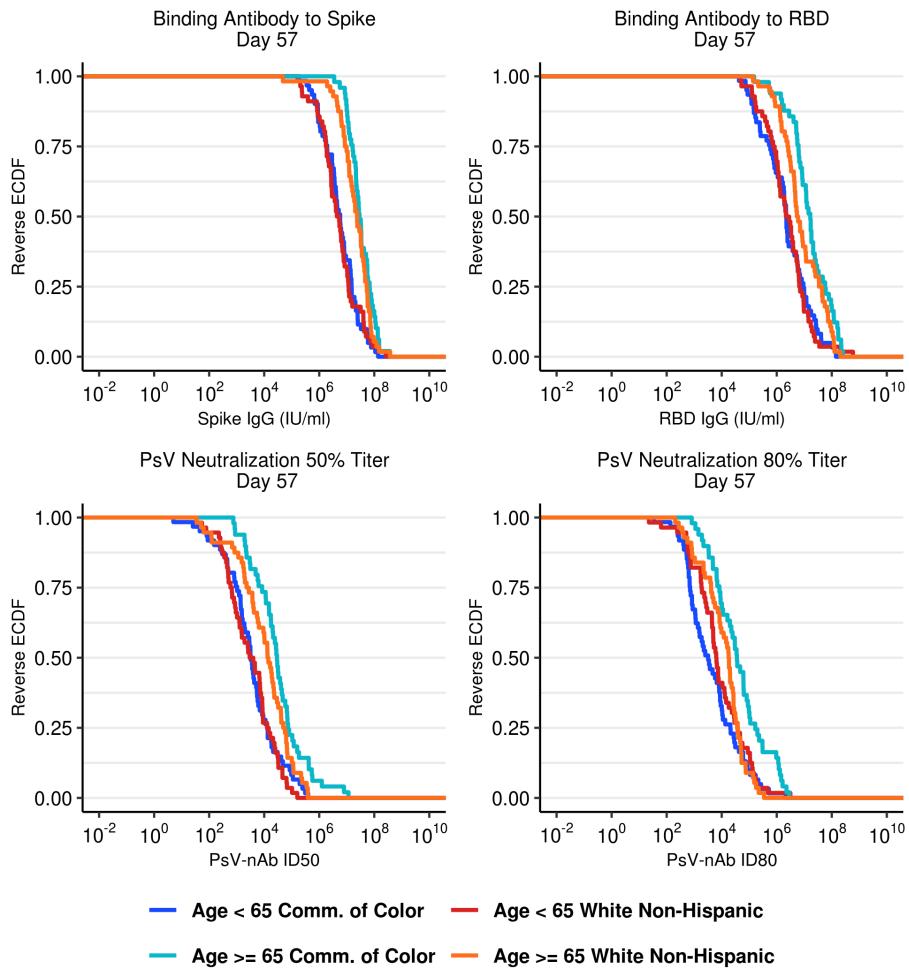


Figure 1.116: (Mock data) RCDF plots for D57 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.

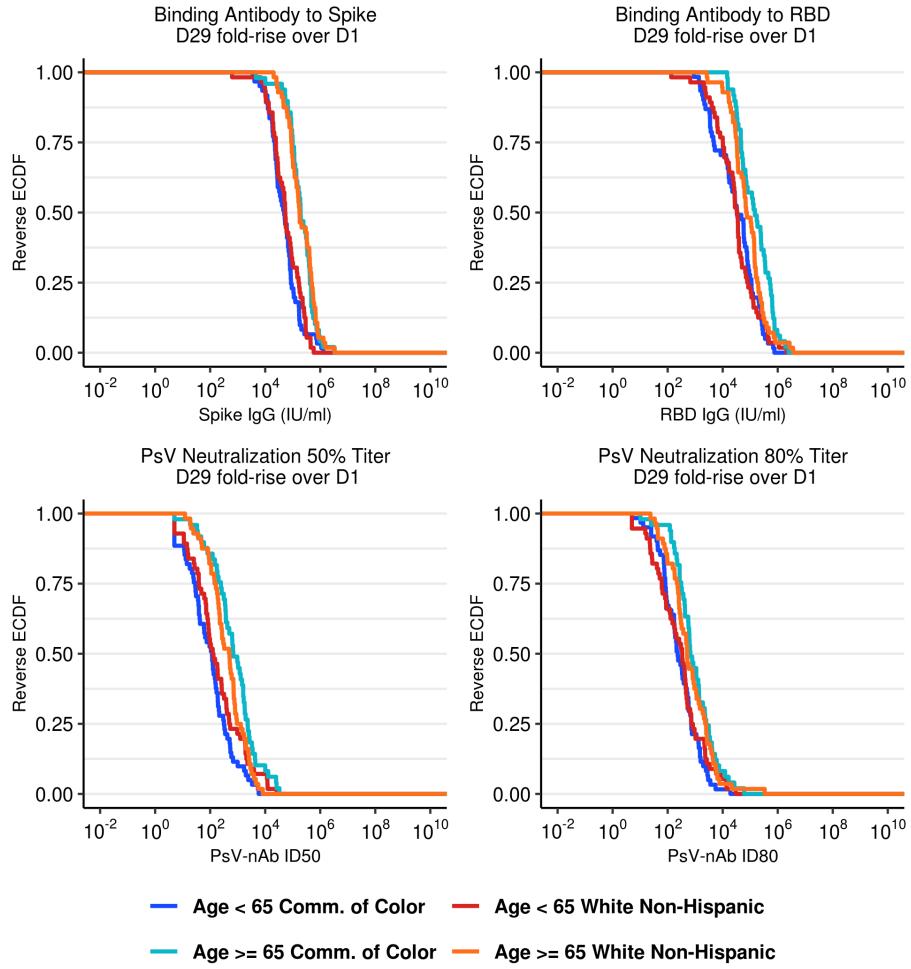


Figure 1.117: (Mock data) RCDF plots for D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT131

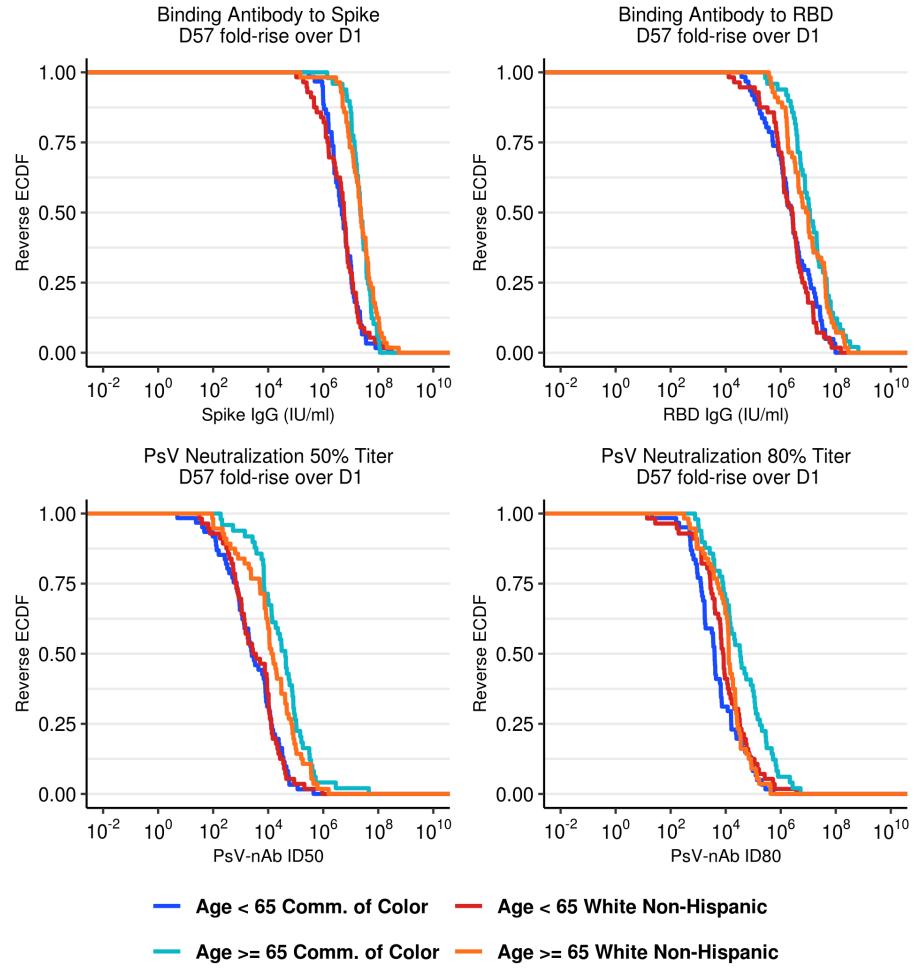


Figure 1.118: (Mock data) RCDF plots for D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.

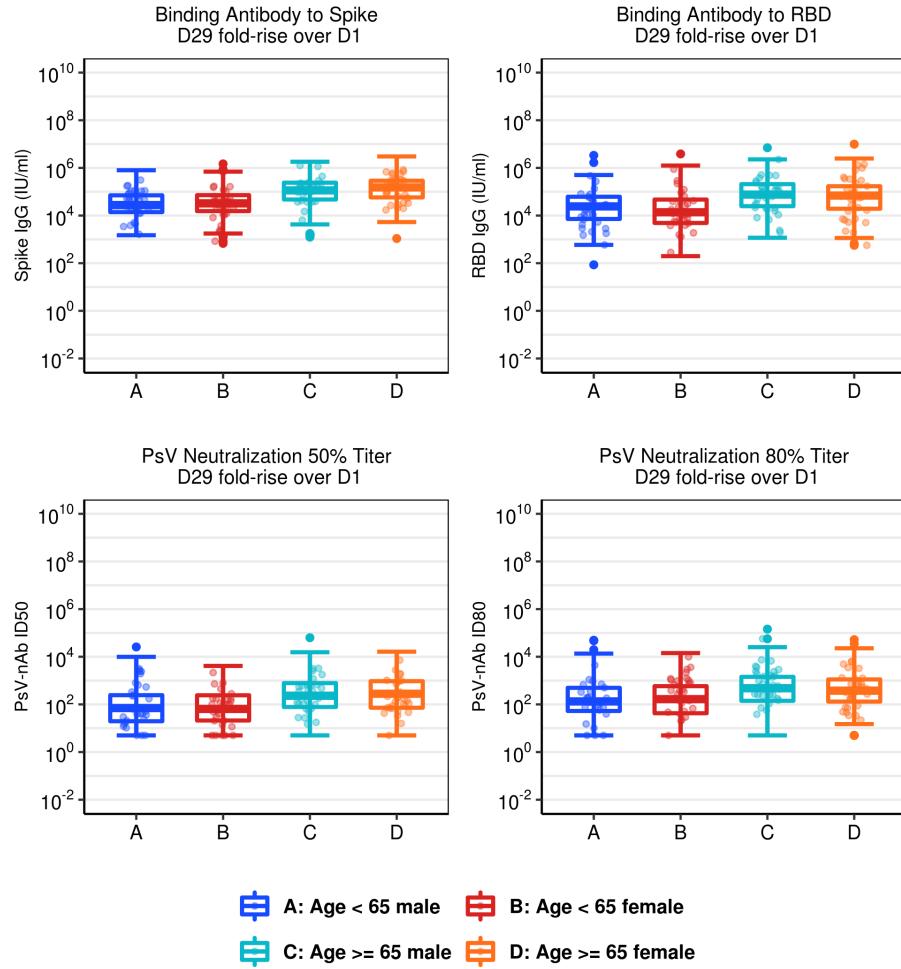


Figure 1.119: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and sex assigned at birth.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT133

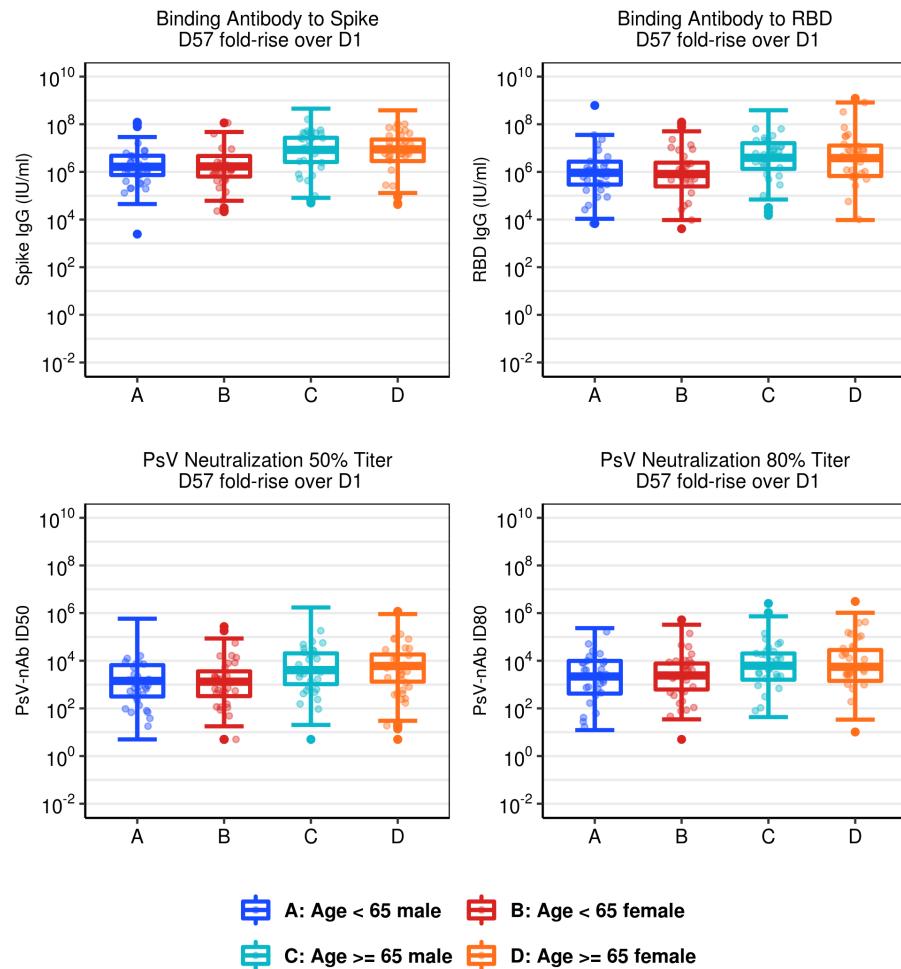


Figure 1.120: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and sex assigned at birth.

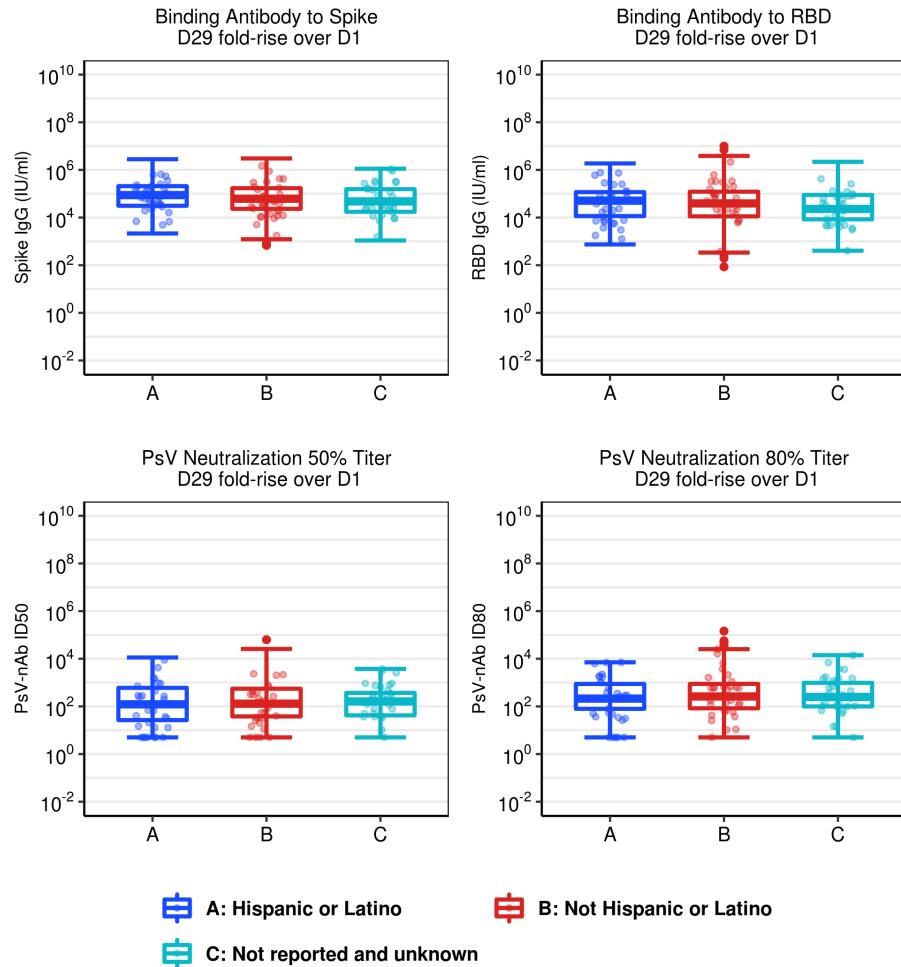


Figure 1.121: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by ethnicity.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT135

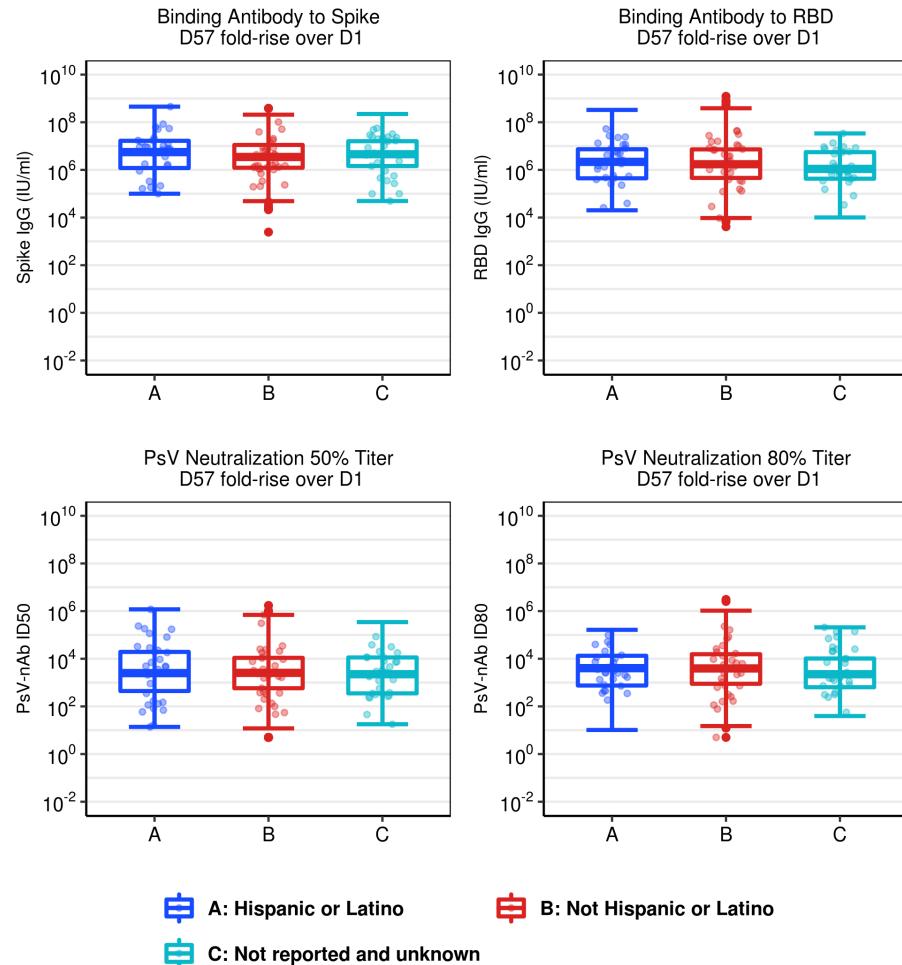


Figure 1.122: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by ethnicity.

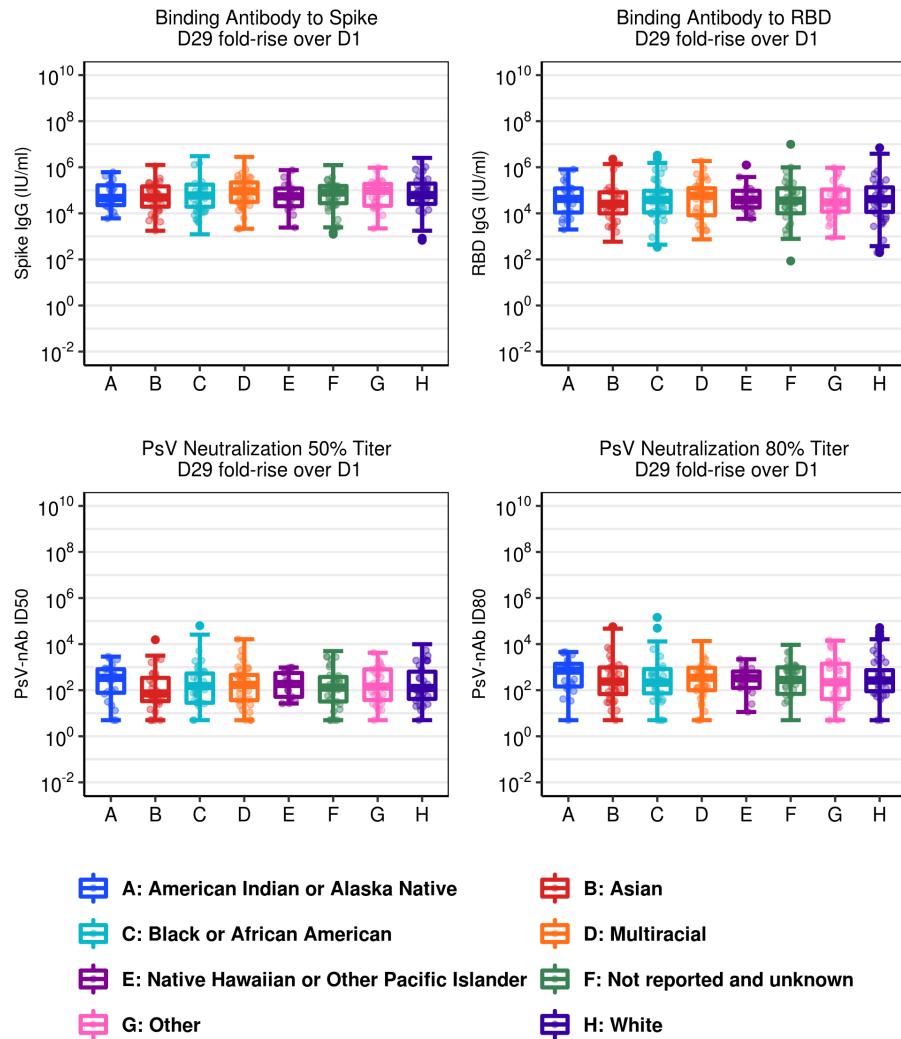


Figure 1.123: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by race.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT137

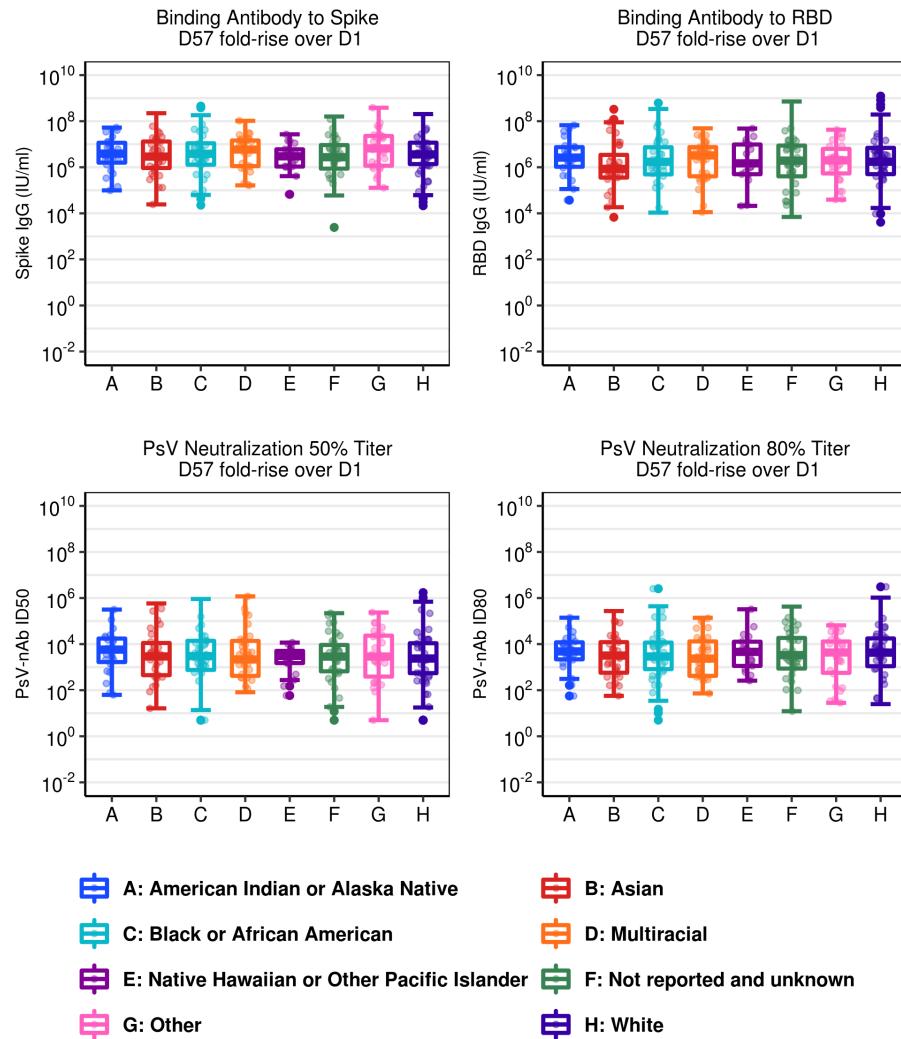


Figure 1.124: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by race.

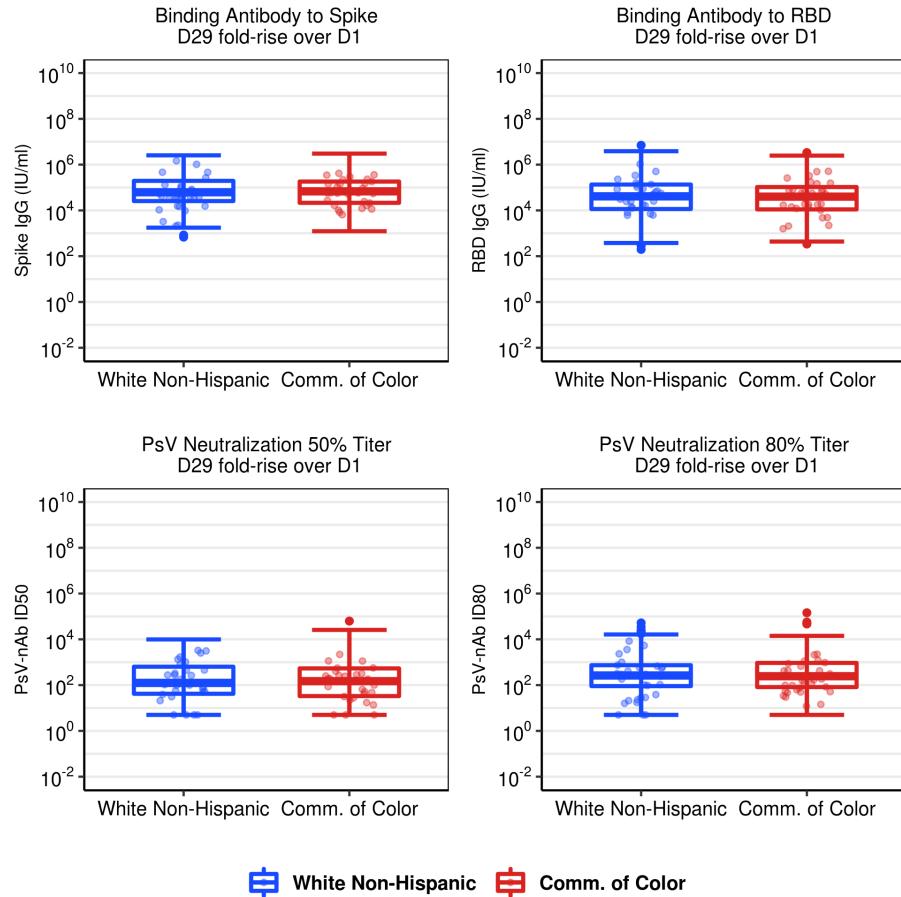


Figure 1.125: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by dichotomous classification of race and ethnic group.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT139

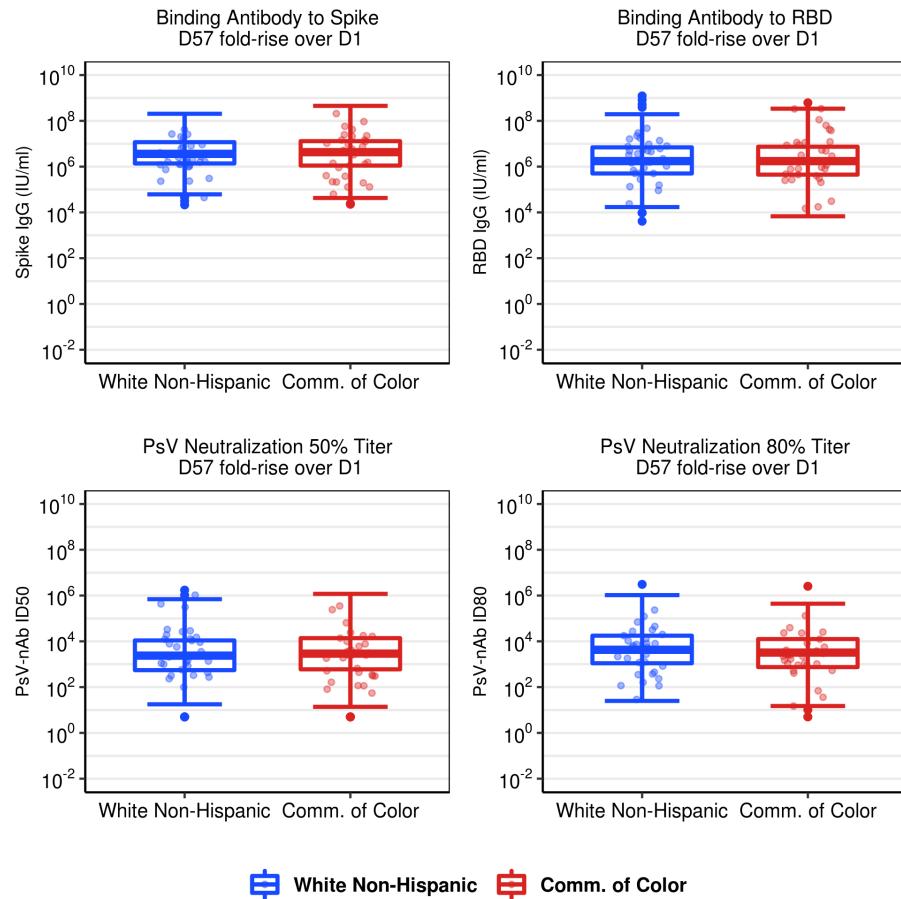


Figure 1.126: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by dichotomous classification of race and ethnic group.

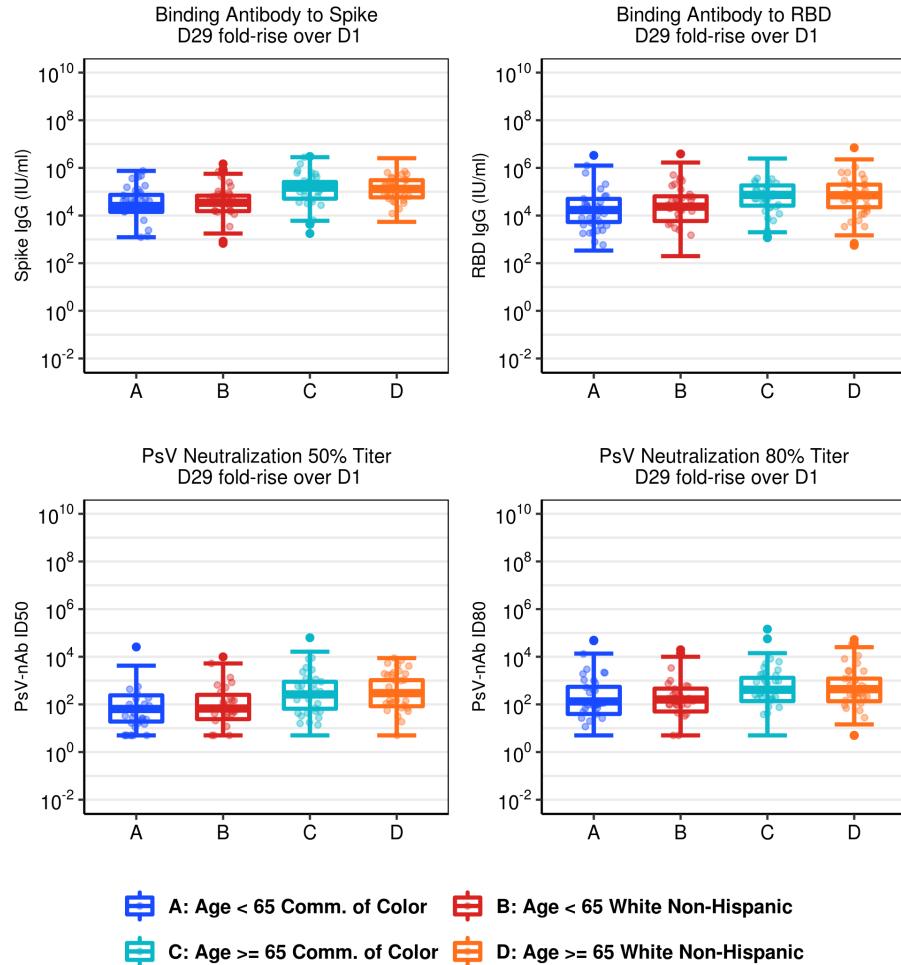


Figure 1.127: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT141

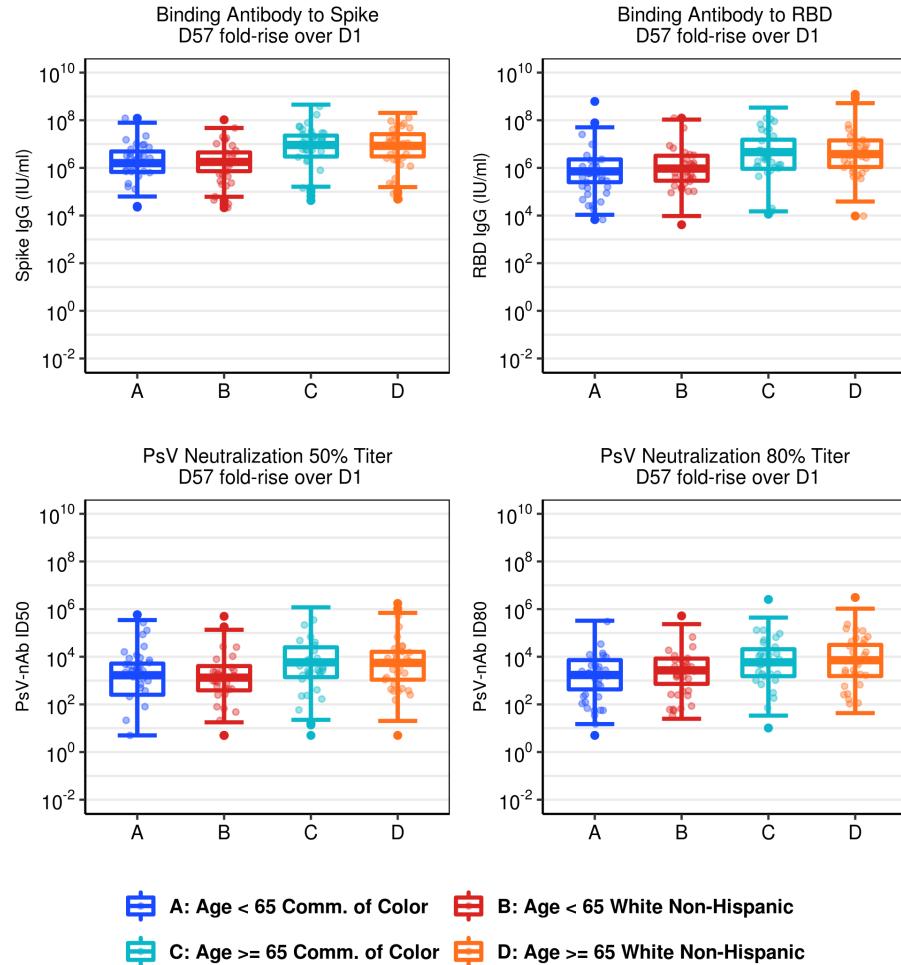


Figure 1.128: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: Baseline negative vaccine arm by age and dichotomous classification of race and ethnic group.

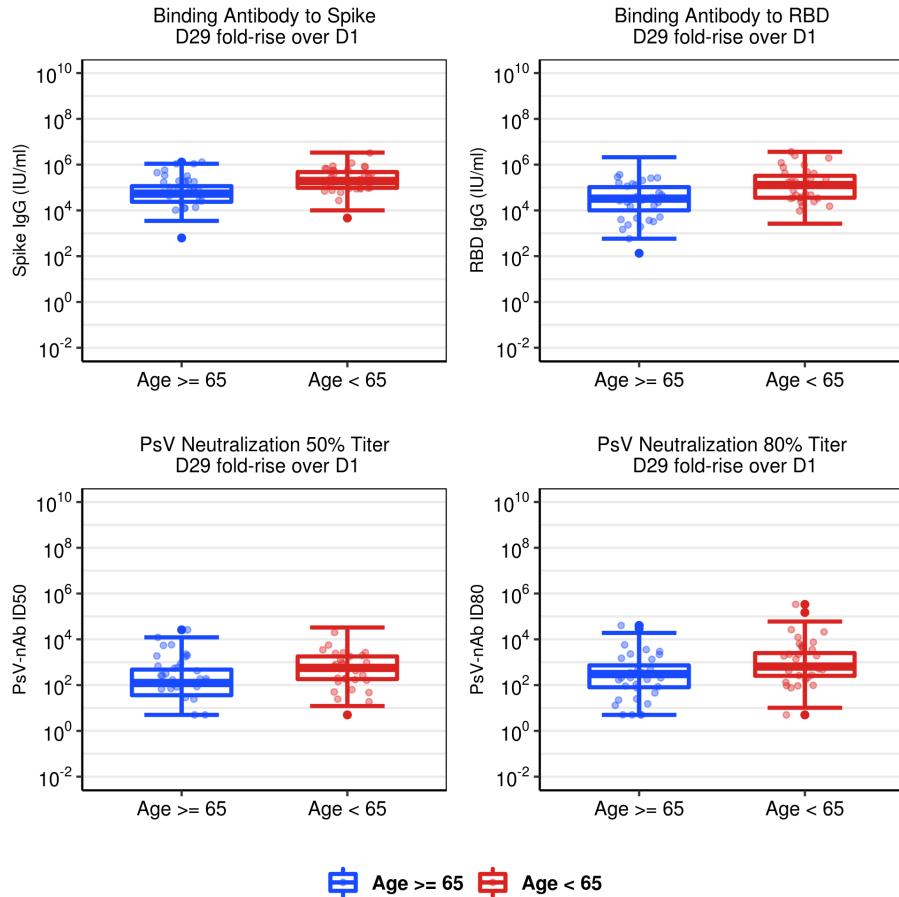


Figure 1.129: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age group.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT143

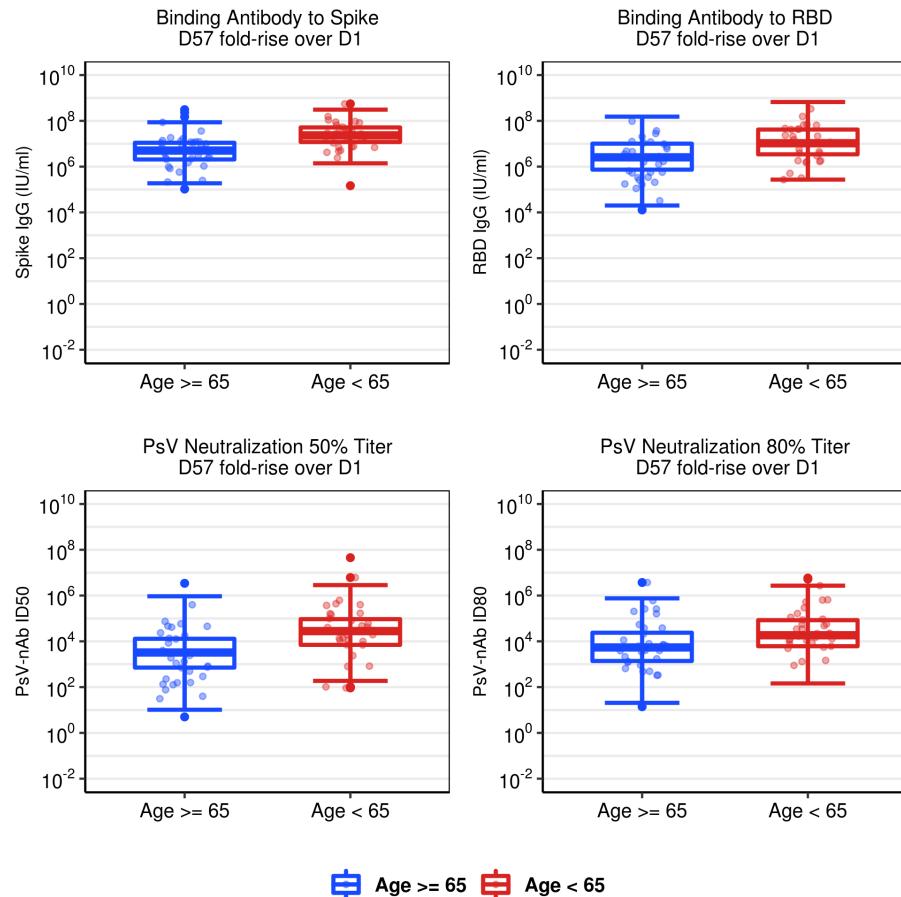


Figure 1.130: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age group.

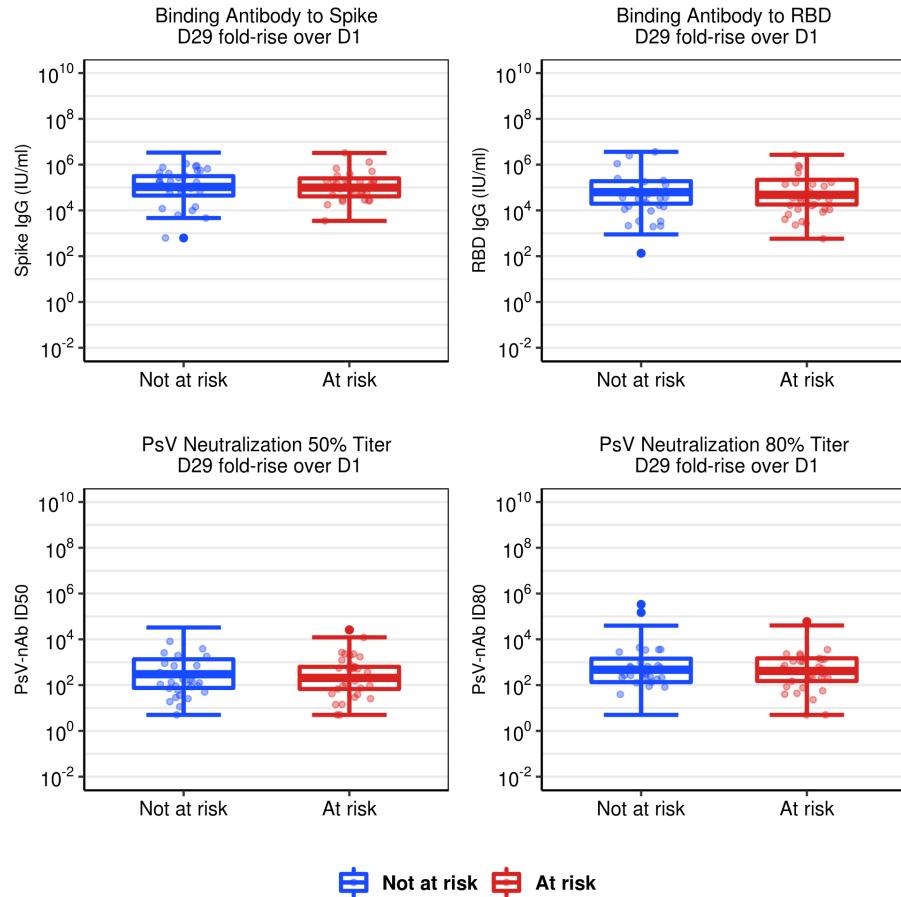


Figure 1.131: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT145

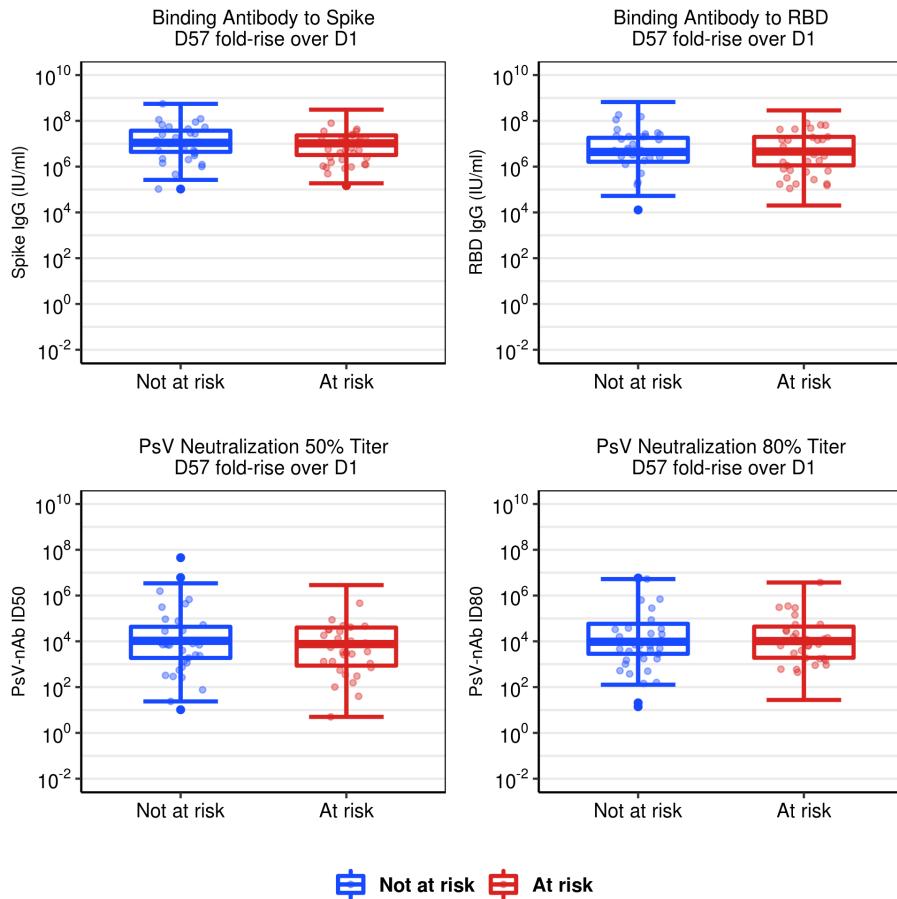


Figure 1.132: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by high-risk condition.

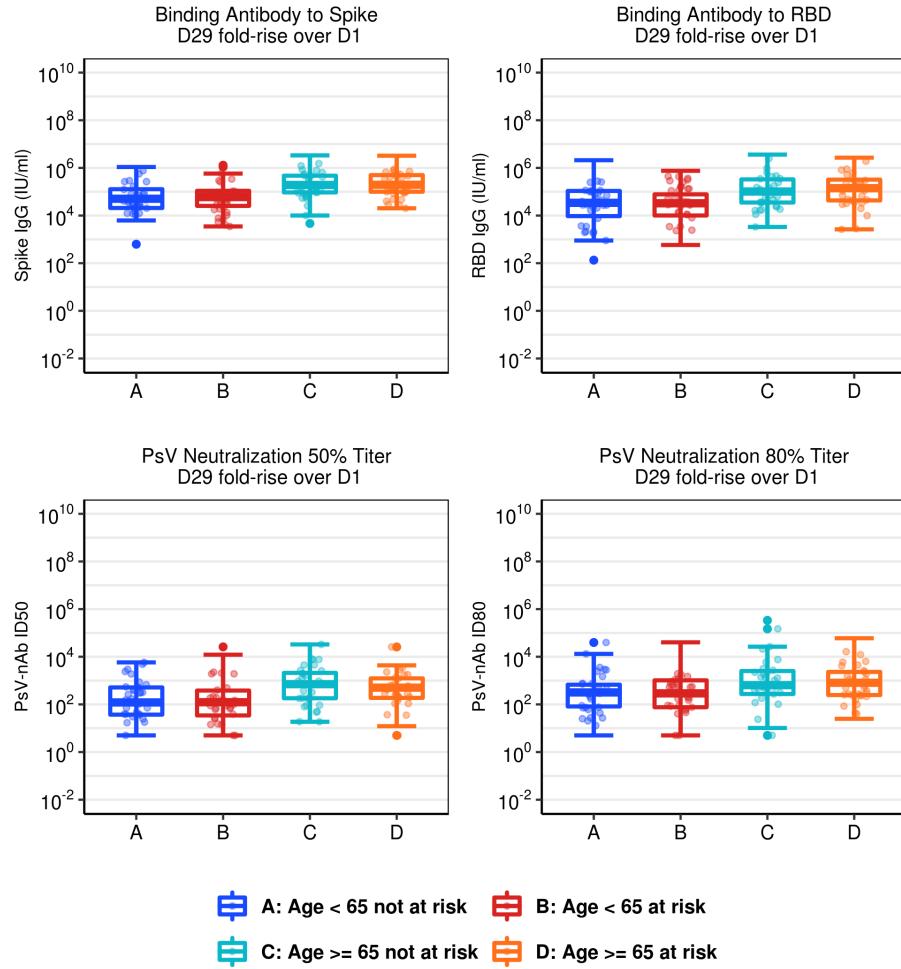


Figure 1.133: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT147

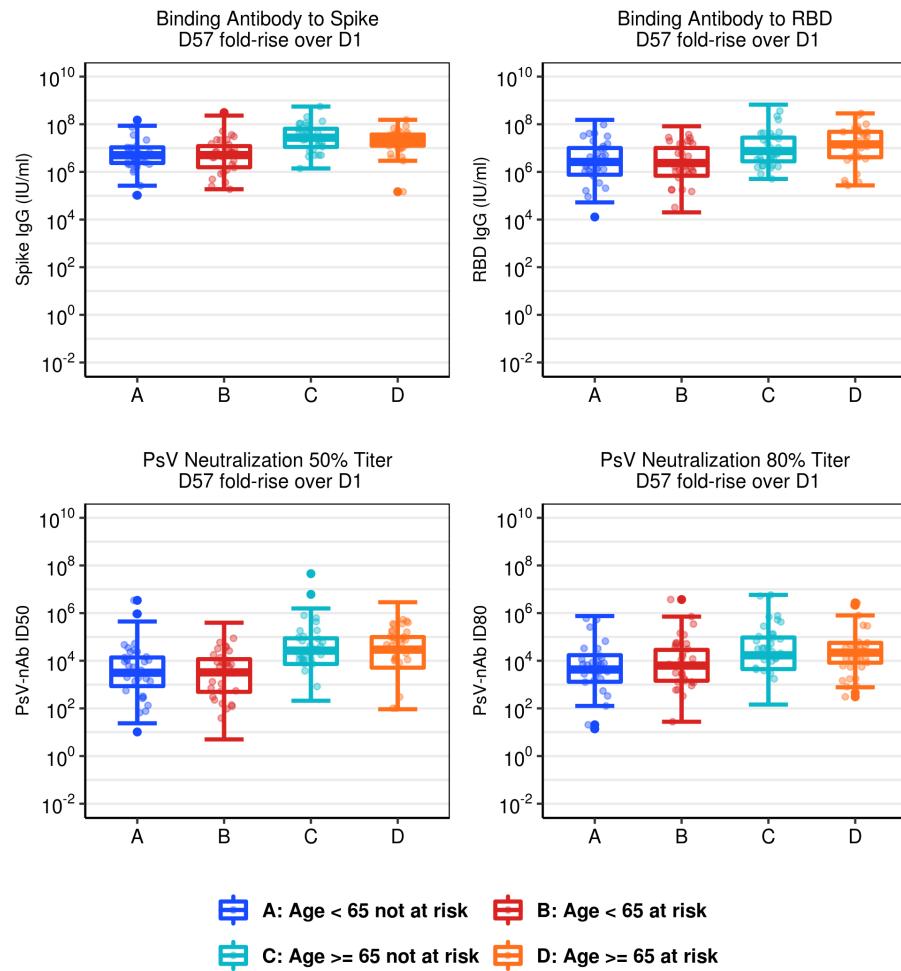


Figure 1.134: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and high-risk condition.

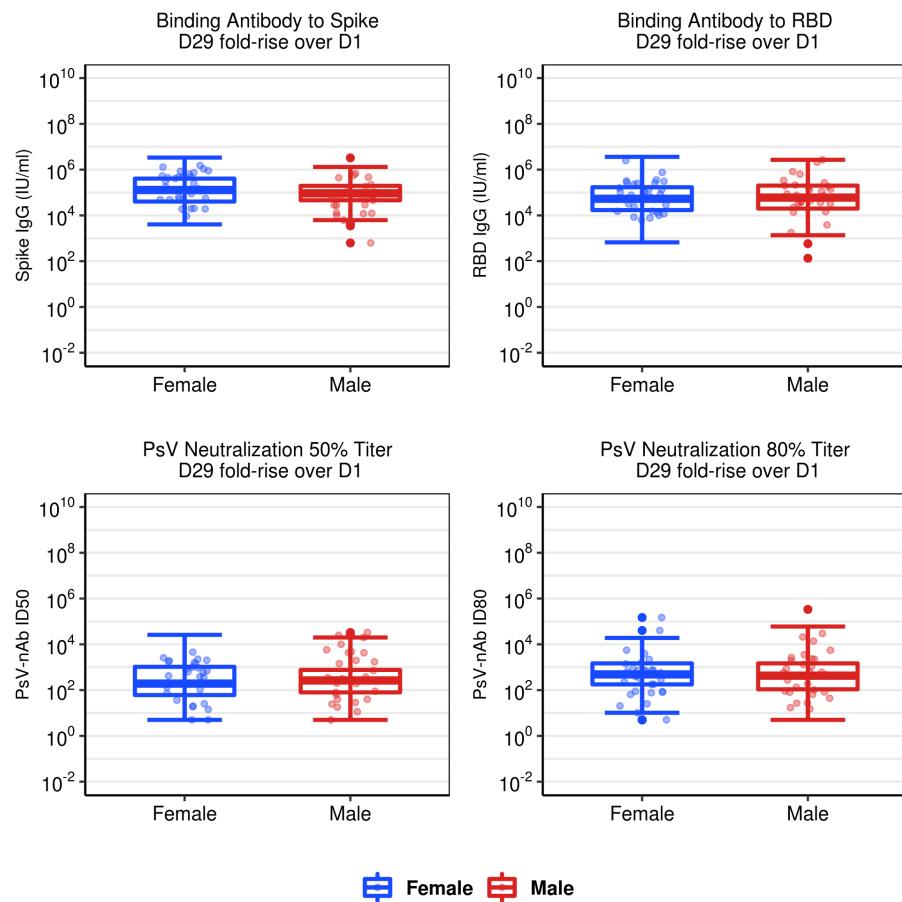


Figure 1.135: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT149

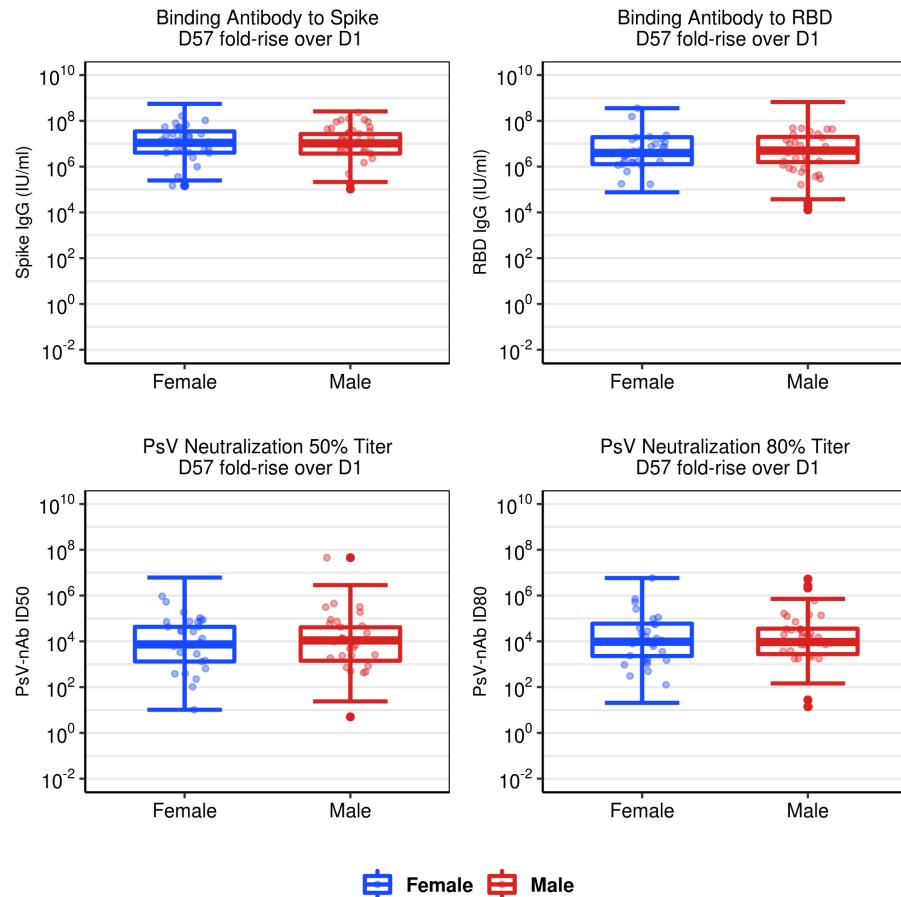


Figure 1.136: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by sex assigned at birth.

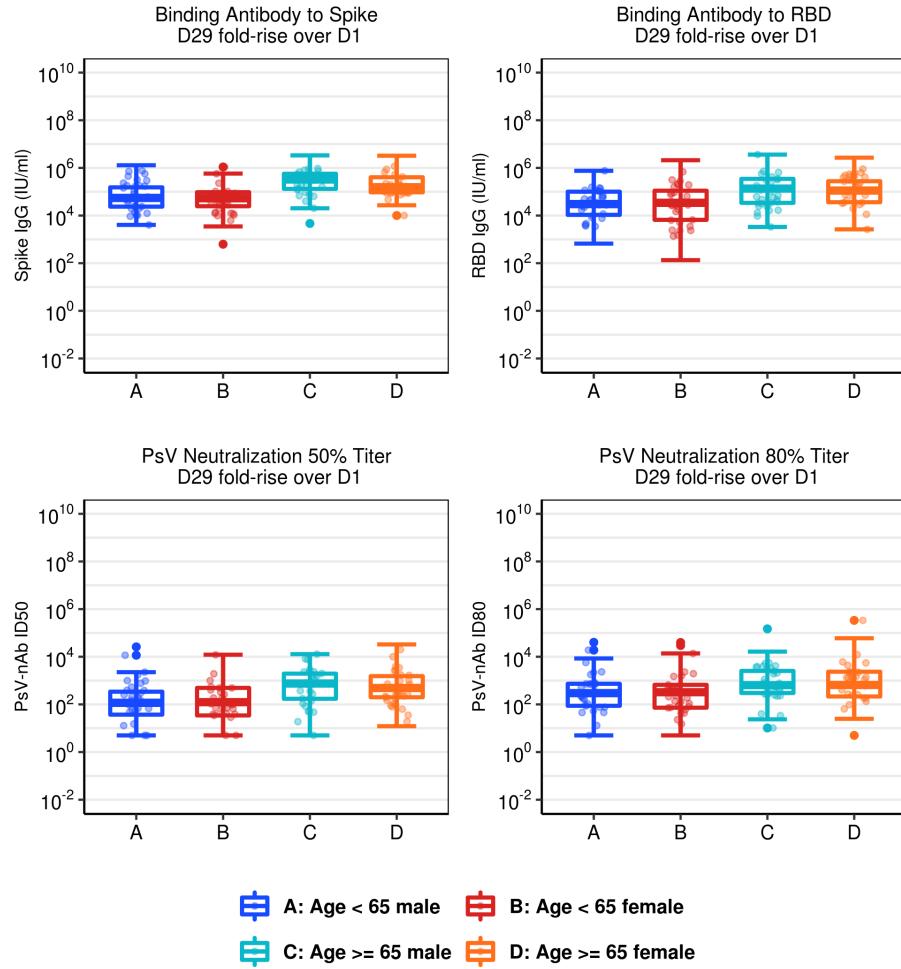


Figure 1.137: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

## 1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT151

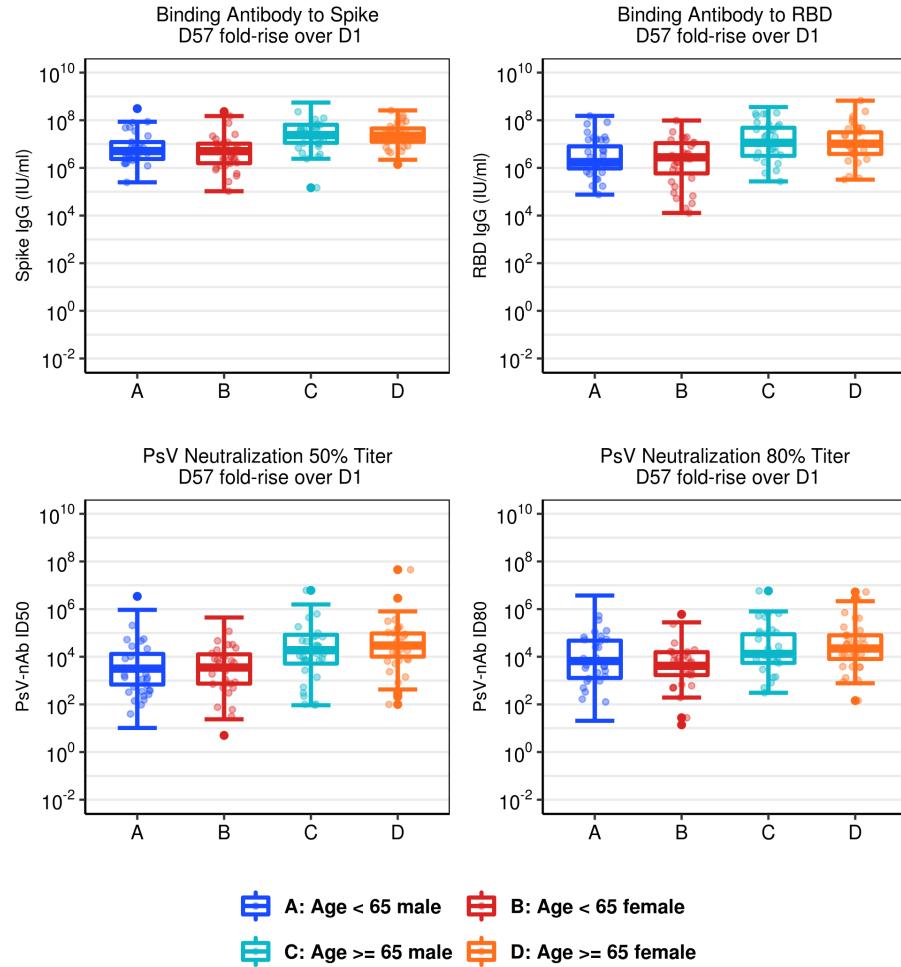


Figure 1.138: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and sex assigned at birth.

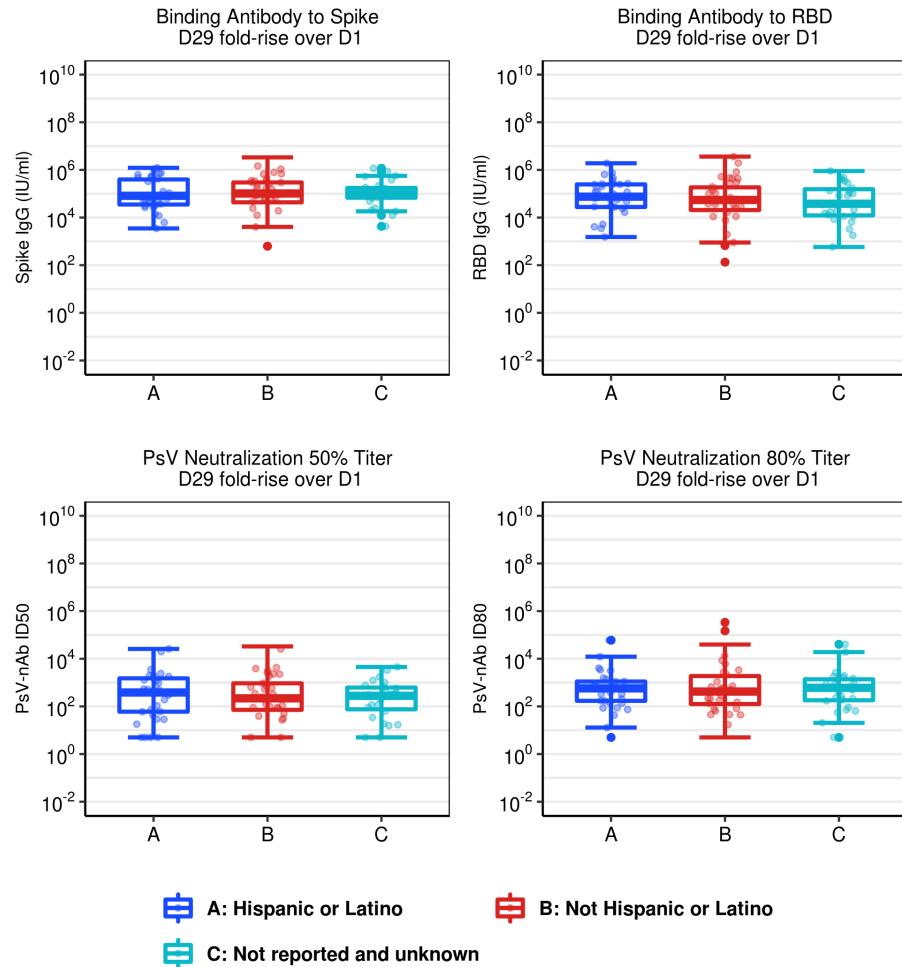


Figure 1.139: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT153

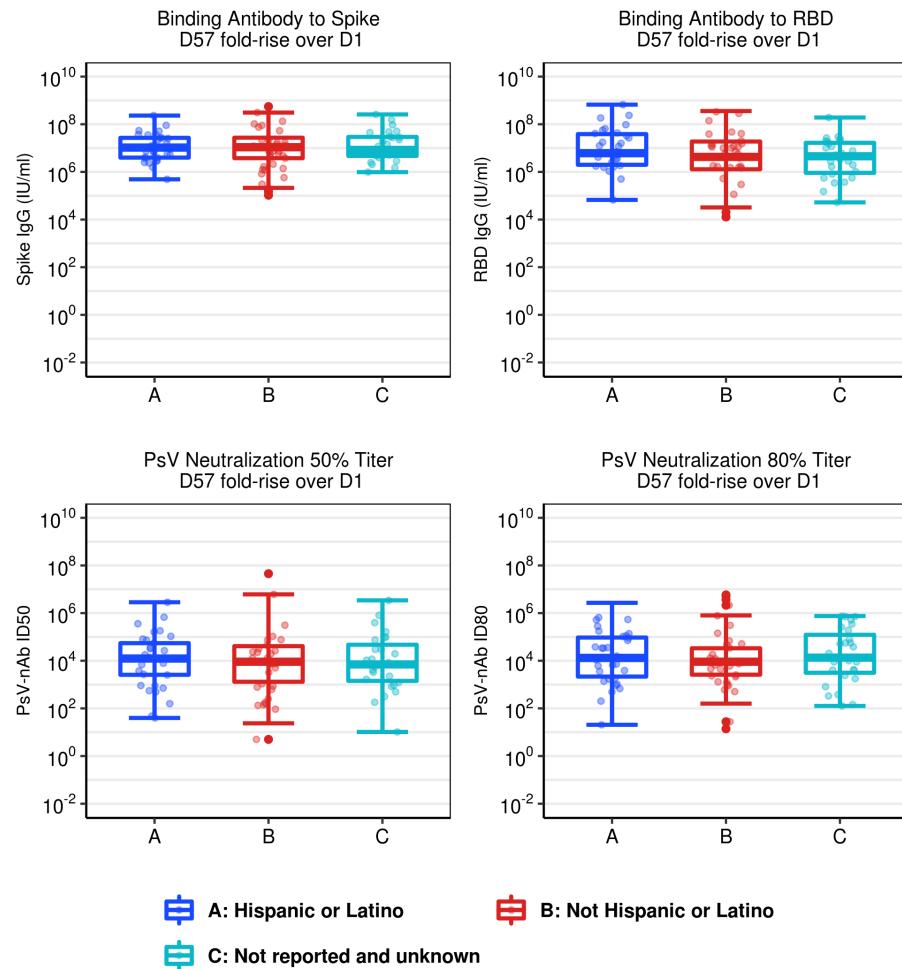


Figure 1.140: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by ethnicity.

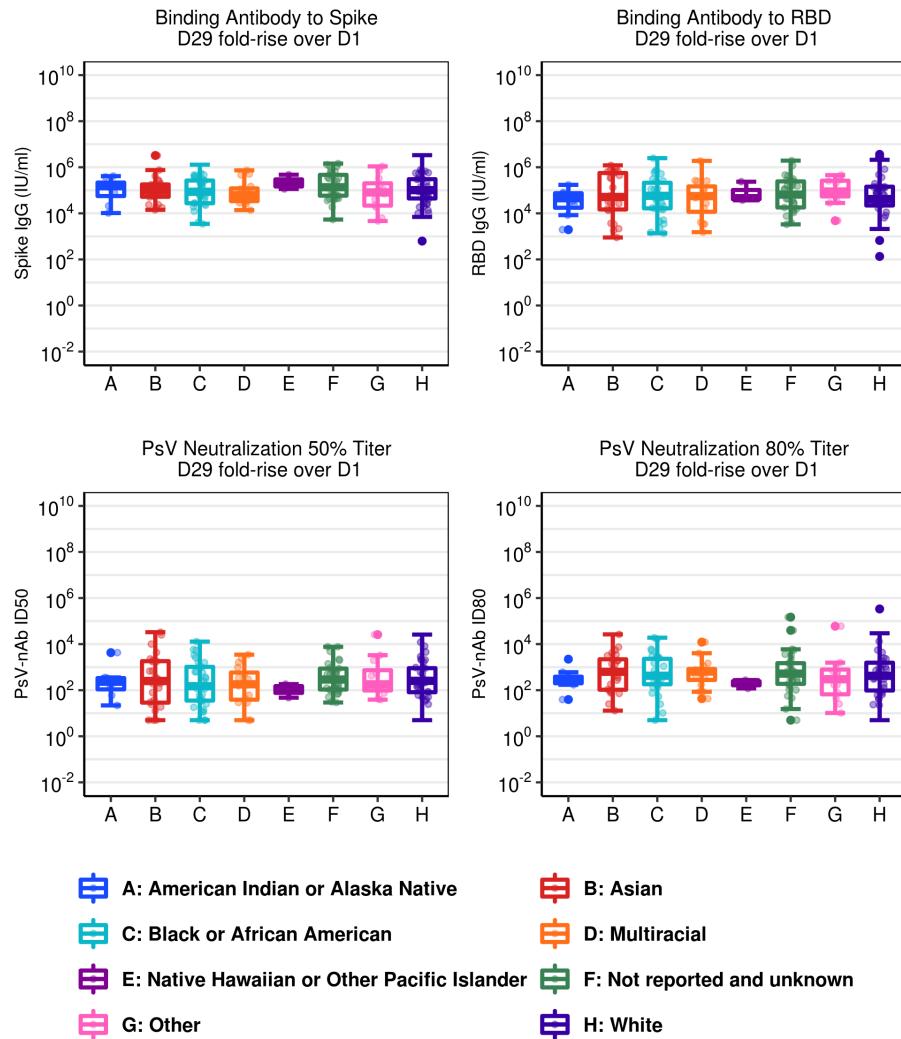


Figure 1.141: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by race.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT155

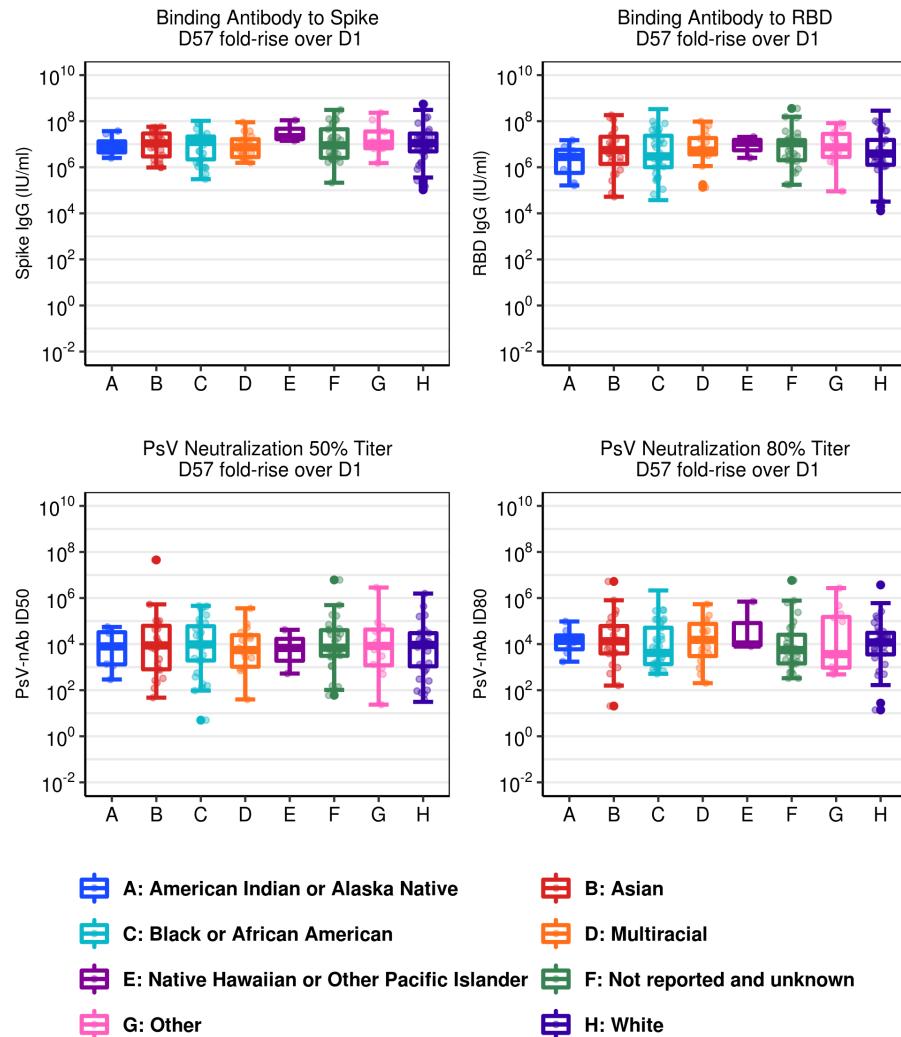


Figure 1.142: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by race.

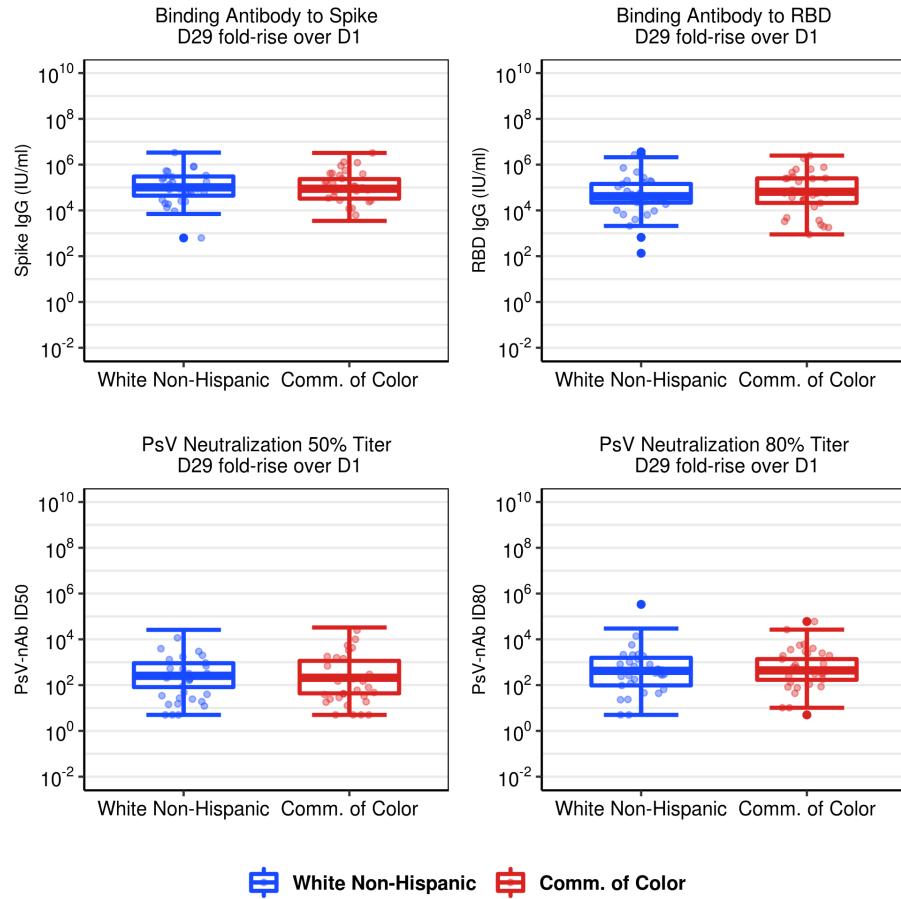


Figure 1.143: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT157

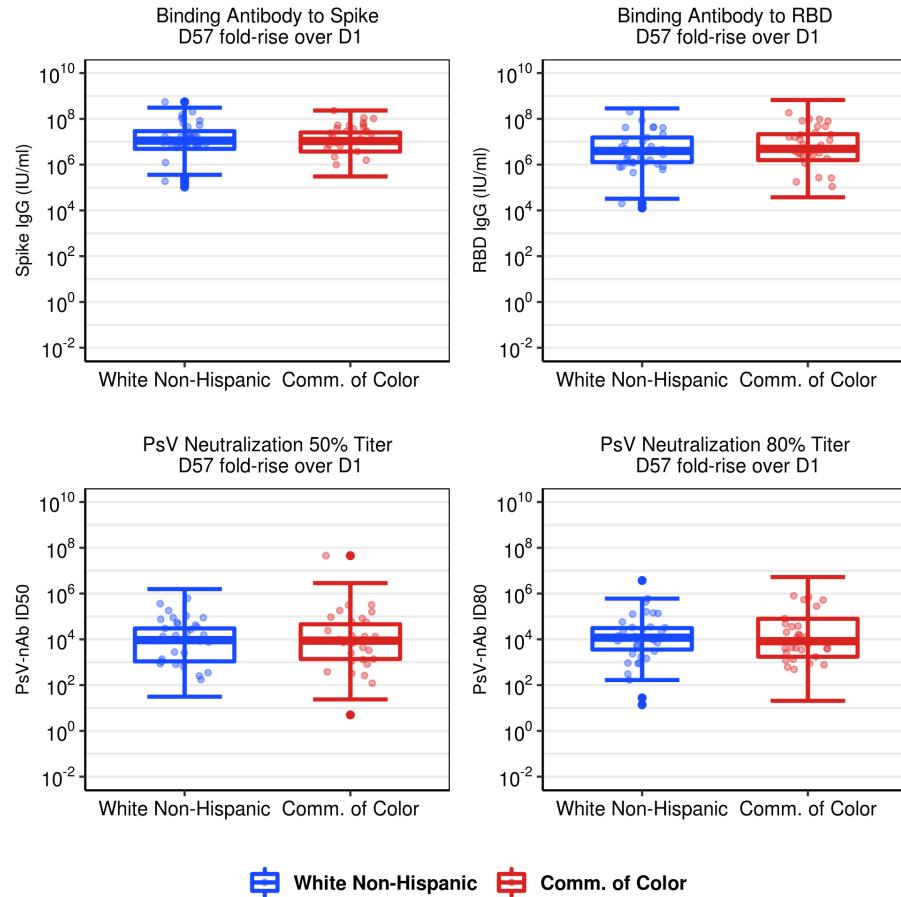


Figure 1.144: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by dichotomous classification of race and ethnic group.

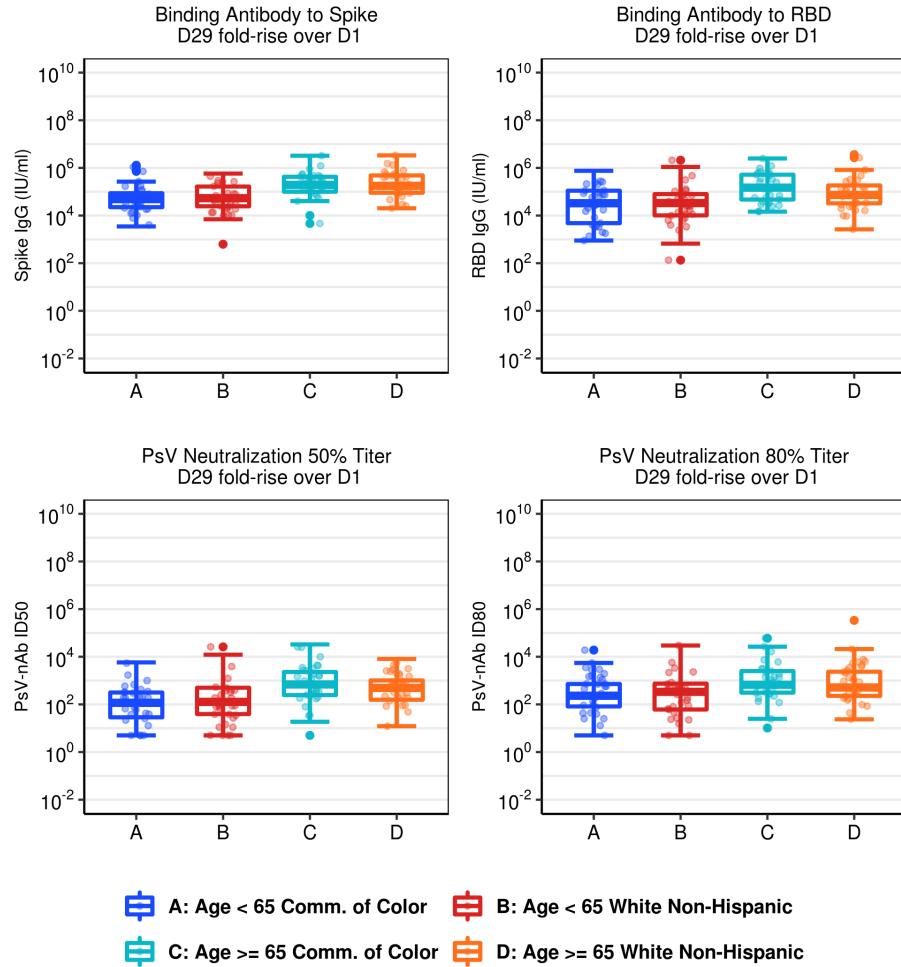


Figure 1.145: (Mock data) Boxplots of D29 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.

1.7. BOXPLOTS OF ANTIBODY MARKERS BY DEMOGRAPHICS FOR PER-PROTOCOL COHORT159

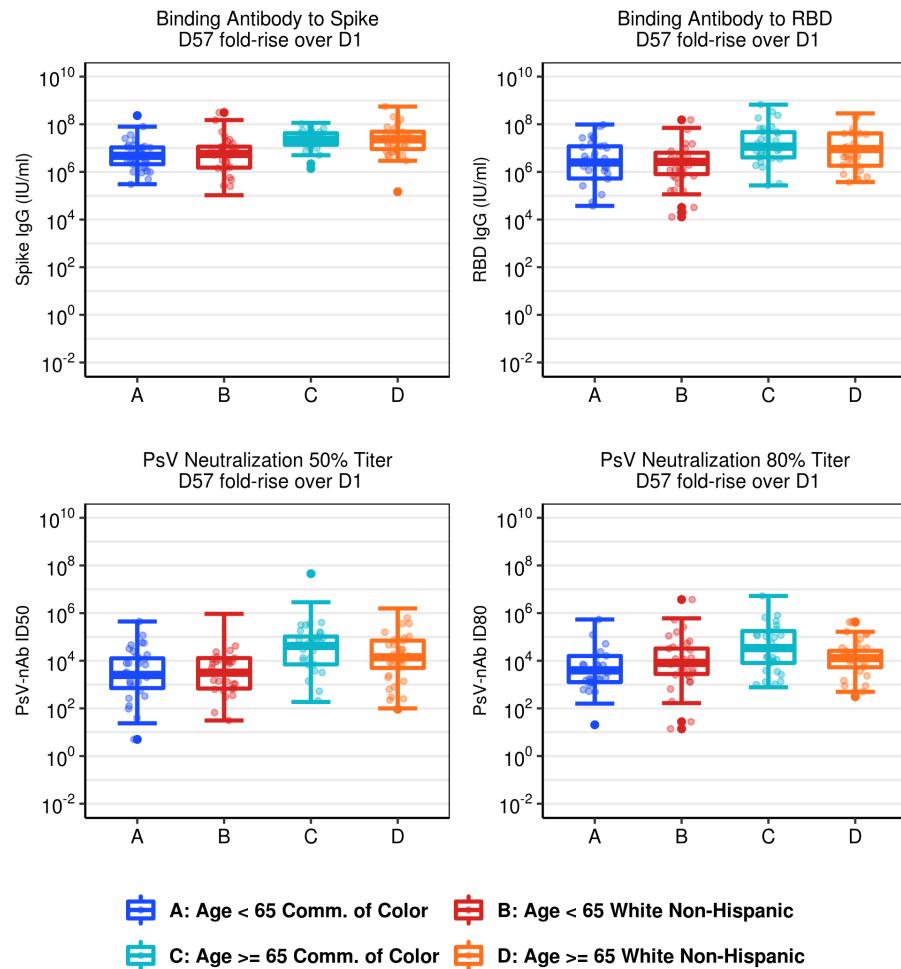


Figure 1.146: (Mock data) Boxplots of D57 fold-rise over D1 Ab markers: baseline positive vaccine arm by age and dichotomous classification of race and ethnic group.



## Chapter 2

# Tabular Description of Immunogenicity Data

2.0.1 Table 1. Demographic

Table 2.1: Table 1. Demographic

Characteristics	Placebo (N = 425)	Vaccine (N = 1180)	Total (N = 1605)
Age			
Age $\leq$ 65	228 (53.6)	579 (49.1)	807 (50.3)
Age $> 65$	197 (46.4)	601 (50.9)	798 (49.7)
Mean (range)	56.6 (18, 85)	58.2 (18, 85)	57.8 (18, 85)
BMI			
Mean +/- SD	29.8 +/- 7.5	29.9 +/- 7.1	29.9 +/- 7.2
Sex			
Female	234 (55.1)	661 (56.0)	895 (55.8)
Male	191 (44.9)	519 (44.0)	710 (44.2)
Hispanic or Latino ethnicity			
Hispanic or Latino	62 (14.6)	140 (11.9)	202 (12.6)
Not Hispanic or Latino	317 (74.6)	933 (79.1)	1250 (77.9)
Not reported and unknown	46 (10.8)	107 (9.1)	153 (9.5)
Race			
American Indian or Alaska Native	13 (3.2)	31 (2.7)	44 (2.8)
Asian	33 (8.0)	97 (8.5)	130 (8.3)
Black or African American	84 (20.4)	223 (19.5)	307 (19.7)
Multiracial	24 (5.8)	66 (5.8)	90 (5.8)
Native Hawaiian or Other Pacific Islander	7 (1.7)	20 (1.7)	27 (1.7)
Not reported and unknown	35 (8.5)	111 (9.7)	146 (9.4)

Table 2.1: Table 1. Demographic (continued)

Characteristics	Placebo (N = 425)	Vaccine (N = 1180)	Total (N = 1605)
Other	14 (3.4)	38 (3.3)	52 (3.3)
White	24 (5.8)	57 (5.0)	81 (5.2)
White Non-Hispanic	178 (43.2)	502 (43.8)	680 (43.7)
Risk for Severe Covid-19			
At-risk	198 (46.6)	589 (49.9)	787 (49.0)
Not at-risk	227 (53.4)	591 (50.1)	818 (51.0)

This table summarises the case-cohort, which measures antibody markers at (Day 1, Day 29, and Day 57).

### 2.0.2 Table 2. Responder rates

Table 2.2: Table 2a. Responder rates by All participants

Group	Baseline	Visit	N	Endpoint	Responder
All participants					
All participants	Negative	Day 29	1062	Binding Antibody to RBD	51.4% (50.8%, 52.0%)
				Binding Antibody to Spike	51.4% (50.8%, 52.0%)
				PsV Neutralization 50% Titer	33.8% (28.6%, 39.1%)
				PsV Neutralization 80% Titer	41.0% (37.7%, 44.4%)
		Day 57	1062	Binding Antibody to RBD	51.4% (50.8%, 52.0%)
				Binding Antibody to Spike	51.4% (50.8%, 52.0%)
				PsV Neutralization 50% Titer	49.1% (48.1%, 50.0%)
				PsV Neutralization 80% Titer	50.0% (49.5%, 50.5%)
Positive	Positive	Day 29	543	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	64.0% (51.6%, 76.4%)
				PsV Neutralization 80% Titer	82.1%

Table 2.2: Table 2a. Responder rates by All participants (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
					(77.3%, 87.0%)	(77.3%)
	Day 57	543		Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	90.2%	90.2%
					(85.2%, 95.2%)	(85.2%)
				PsV Neutralization 80% Titer	98.1%	98.1%
					(97.8%, 98.4%)	(97.8%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.3: Table 2b. Responder rates by Age

Group	Baseline	Visit	N	Endpoint	Responder
Age					
Age $\leq$ 65					
	Negative	Day 29	513	Binding Antibody to RBD	51.6% (51.5%, 51.8%)
				Binding Antibody to Spike	51.6% (51.5%, 51.8%)
				PsV Neutralization 50% Titer	31.5% (29.5%, 33.6%)
				PsV Neutralization 80% Titer	39.6% (37.9%, 41.3%)
		Day 57	513	Binding Antibody to RBD	51.6% (51.5%, 51.8%)
				Binding Antibody to Spike	51.6% (51.5%, 51.8%)
				PsV Neutralization 50% Titer	49.1% (47.9%, 50.3%)
				PsV Neutralization 80% Titer	50.0% (49.5%, 50.6%)
	Positive	Day 29	294	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	59.3% (57.1%, 61.4%)
				PsV Neutralization 80% Titer	80.2% (76.4%, 83.9%)
		Day 57	294	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	88.5% (86.7%, 90.2%)
				PsV Neutralization 80% Titer	98.0% (97.9%, 98.0%)
Age $>=$ 65					
	Negative	Day 29	549	Binding Antibody to RBD	50.5% (50.5%, 50.5%)
				Binding Antibody to Spike	50.5% (50.5%, 50.5%)
				PsV Neutralization 50% Titer	42.1% (42.1%, 42.1%)
				PsV Neutralization 80% Titer	46.3% (46.3%, 46.3%)
		Day 57	549	Binding Antibody to RBD	50.5%

Table 2.3: Table 2b. Responder rates by Age (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	249	249	Binding Antibody to Spike	(50.5%, 50.5%)	(50.5%)
				PsV Neutralization 50% Titer	50.5%	50.5%
				PsV Neutralization 80% Titer	(50.5%, 50.5%)	(50.5%)
				Binding Antibody to RBD	48.9%	48.9%
				Binding Antibody to Spike	(48.9%, 48.9%)	(48.9%)
	Day 57	249	249	PsV Neutralization 50% Titer	50.0%	50.0%
				PsV Neutralization 80% Titer	(50.0%, 50.0%)	(50.0%)
				Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	83.1%	83.1%
				PsV Neutralization 80% Titer	(83.1%, 83.1%)	(83.1%)
				Binding Antibody to RBD	90.1%	90.1%
				Binding Antibody to Spike	(90.1%, 90.1%)	(90.1%)
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification (LLOQ) or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.4: Table 2c. Responder rates by Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	Responder
Risk for Severe Covid-19					
At-risk	Negative	Day 29	541	Binding Antibody to RBD	52.0% (50.8%, 53.1%)
				Binding Antibody to Spike	52.0% (50.8%, 53.1%)
				PsV Neutralization 50% Titer	33.9% (23.1%, 44.7%)
				PsV Neutralization 80% Titer	40.9% (33.4%, 48.5%)
		Day 57	541	Binding Antibody to RBD	52.0% (50.8%, 53.1%)
				Binding Antibody to Spike	52.0% (50.8%, 53.1%)
				PsV Neutralization 50% Titer	48.7% (46.2%, 51.2%)
				PsV Neutralization 80% Titer	50.6% (47.7%, 53.6%)
Positive	Negative	Day 29	246	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	68.7% (54.1%, 83.4%)
				PsV Neutralization 80% Titer	78.3% (70.2%, 86.3%)
		Day 57	246	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	92.2% (89.3%, 95.1%)
				PsV Neutralization 80% Titer	97.7% (96.8%, 98.5%)
Not at-risk	Negative	Day 29	521	Binding Antibody to RBD	51.2% (49.7%, 52.7%)
				Binding Antibody to Spike	51.2% (49.7%, 52.7%)
				PsV Neutralization 50% Titer	33.8% (29.5%, 38.1%)
				PsV Neutralization 80% Titer	41.1% (38.6%, 43.6%)
		Day 57	521	Binding Antibody to RBD	51.2%

Table 2.4: Table 2c. Responder rates by Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	297		Binding Antibody to Spike	(49.7%, 52.7%)	(49.7%)
				PsV Neutralization 50% Titer	51.2%	51.2%
				PsV Neutralization 80% Titer	(49.7%, 52.7%)	(49.7%)
				Binding Antibody to RBD	49.2%	49.2%
				Binding Antibody to Spike	(48.2%, 50.2%)	(48.2%)
	Day 57	297		PsV Neutralization 80% Titer	49.8%	49.8%
				Binding Antibody to RBD	(48.5%, 51.1%)	(48.5%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	62.5%	62.5%
				Binding Antibody to Spike	(51.1%, 73.9%)	(51.1%)
				PsV Neutralization 80% Titer	83.4%	83.4%
				Binding Antibody to RBD	(78.2%, 88.6%)	(78.2%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	89.6%	89.6%
				Binding Antibody to Spike	(84.5%, 94.6%)	(84.5%)
				PsV Neutralization 80% Titer	98.2%	98.2%
				Binding Antibody to RBD	(97.4%, 99.0%)	(97.4%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification (LLOQ) or as participants with baseline values above the LLOQ with a 4-fold increase in neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.5: Table 2d. Responder rates by Age, Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	Responder
Age, Risk for Severe Covid-19					
Age $\geq$ 65 At-risk	Negative	Day 29	257	Binding Antibody to RBD	51.4% (51.4%, 51.4%)
				Binding Antibody to Spike	51.4% (51.4%, 51.4%)
				PsV Neutralization 50% Titer	28.7% (28.7%, 28.7%)
				PsV Neutralization 80% Titer	37.3% (37.3%, 37.3%)
		Day 57	257	Binding Antibody to RBD	51.4% (51.4%, 51.4%)
				Binding Antibody to Spike	51.4% (51.4%, 51.4%)
				PsV Neutralization 50% Titer	47.5% (47.5%, 47.5%)
				PsV Neutralization 80% Titer	49.2% (49.2%, 49.2%)
Positive	Day 29	148		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	62.4% (62.4%, 62.4%)
				PsV Neutralization 80% Titer	74.7% (74.7%, 74.7%)
		Day 57	148	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	91.0% (91.0%, 91.0%)
				PsV Neutralization 80% Titer	98.0% (98.0%, 98.0%)
Age $\geq$ 65 Not at-risk	Negative	Day 29	256	Binding Antibody to RBD	51.7% (51.7%, 51.7%)
				Binding Antibody to Spike	51.7% (51.7%, 51.7%)
				PsV Neutralization 50% Titer	32.3% (32.3%, 32.3%)
				PsV Neutralization 80% Titer	40.2% (40.2%, 40.2%)
		Day 57	256	Binding Antibody to RBD	51.7%

Table 2.5: Table 2d. Responder rates by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	146		Binding Antibody to Spike	(51.7%, 51.7%)	(51.7%
				PsV Neutralization 50% Titer	51.7%	51.7%
				PsV Neutralization 80% Titer	(51.7%, 51.7%)	(51.7%
				Binding Antibody to RBD	49.5%	49.5%
				Binding Antibody to Spike	(49.5%, 49.5%)	(49.5%
	Day 57	146		PsV Neutralization 80% Titer	50.3%	50.3%
				Binding Antibody to RBD	(50.3%, 50.3%)	(50.3%
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%
				PsV Neutralization 80% Titer	58.5%	58.5%
Age $\geq 65$ At-risk	Day 29	284		PsV Neutralization 80% Titer	(58.5%, 58.5%)	(58.5%
				Binding Antibody to RBD	81.6%	81.6%
				Binding Antibody to Spike	(81.6%, 81.6%)	(81.6%
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%
	Day 57	284		Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%
				PsV Neutralization 80% Titer	87.8%	87.8%
				Binding Antibody to RBD	(87.8%, 87.8%)	(87.8%
				Binding Antibody to Spike	98.0%	98.0%
Positive	Day 29	98		PsV Neutralization 80% Titer	(98.0%, 98.0%)	(98.0%
				Binding Antibody to RBD	52.8%	52.8%
				Binding Antibody to Spike	(52.8%, 52.8%)	(52.8%
				PsV Neutralization 50% Titer	52.8%	52.8%
				PsV Neutralization 80% Titer	(52.8%, 52.8%)	(52.8%
	Day 57	284		PsV Neutralization 50% Titer	42.1%	42.1%
				PsV Neutralization 80% Titer	(42.1%, 42.1%)	(42.1%
				Binding Antibody to RBD	46.6%	46.6%
				Binding Antibody to Spike	(46.6%, 46.6%)	(46.6%
				PsV Neutralization 50% Titer	52.8%	52.8%

Table 2.5: Table 2d. Responder rates by Age, Risk for Severe Covid-19 (contin)

Group	Baseline	Visit	N	Endpoint	Responder	
Age $\geq 65$ Not at-risk	Negative	Day 29	265	PsV Neutralization 50% Titer	82.1% (82.1%, 82.1%)	
				PsV Neutralization 80% Titer	85.6% (85.6%, 85.6%)	
		Day 57	98	Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
		Day 29		Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	94.9% (94.9%, 94.9%)	
	Positive	Day 57	265	PsV Neutralization 80% Titer	96.9% (96.9%, 96.9%)	
				Binding Antibody to RBD	48.3% (48.3%, 48.3%)	
		Day 29		Binding Antibody to Spike	48.3% (48.3%, 48.3%)	
				PsV Neutralization 50% Titer	42.1% (42.1%, 42.1%)	
		Day 57		PsV Neutralization 80% Titer	45.9% (45.9%, 45.9%)	
				Binding Antibody to RBD	48.3% (48.3%, 48.3%)	
		Day 29	151	Binding Antibody to Spike	48.3% (48.3%, 48.3%)	
				PsV Neutralization 50% Titer	47.2% (47.2%, 47.2%)	
		Day 57		PsV Neutralization 80% Titer	47.2% (47.2%, 47.2%)	
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
		Day 29		Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	83.7% (83.7%, 83.7%)	
		Day 57	151	PsV Neutralization 80% Titer	93.0% (93.0%, 93.0%)	
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
		Day 29		Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	99.0% (99.0%, 99.0%)	
		Day 57		PsV Neutralization 80% Titer	99.7%	

Table 2.5: Table 2d. Responder rates by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
					(99.7%, 99.7%)	(99.7%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.6: Table 2e. Responder rates by Sex

Group	Baseline	Visit	N	Endpoint	Responder
Sex					
Female					
	Negative	Day 29	597	Binding Antibody to RBD	51.9% (50.5%, 53.4%)
				Binding Antibody to Spike	51.9% (50.5%, 53.4%)
				PsV Neutralization 50% Titer	34.1% (27.7%, 40.5%)
				PsV Neutralization 80% Titer	40.9% (35.4%, 46.5%)
		Day 57	597	Binding Antibody to RBD	51.9% (50.5%, 53.4%)
				Binding Antibody to Spike	51.9% (50.5%, 53.4%)
				PsV Neutralization 50% Titer	49.3% (47.2%, 51.4%)
				PsV Neutralization 80% Titer	51.1% (49.6%, 52.6%)
	Positive	Day 29	298	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	61.3% (48.9%, 73.7%)
				PsV Neutralization 80% Titer	82.4% (78.9%, 85.9%)
		Day 57	298	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	89.2% (84.7%, 93.8%)
				PsV Neutralization 80% Titer	97.6% (97.0%, 98.3%)
Male					
	Negative	Day 29	465	Binding Antibody to RBD	50.7% (48.0%, 53.4%)
				Binding Antibody to Spike	50.7% (48.0%, 53.4%)
				PsV Neutralization 50% Titer	33.5% (28.8%, 38.2%)
				PsV Neutralization 80% Titer	41.2% (40.6%, 41.7%)
		Day 57	465	Binding Antibody to RBD	50.7%

Table 2.6: Table 2e. Responder rates by Sex (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	245		Binding Antibody to Spike	(48.0%, 53.4%)	(48.0%)
				PsV Neutralization 50% Titer	50.7%	50.7%
				PsV Neutralization 80% Titer	(48.0%, 53.4%)	(48.0%)
				Binding Antibody to RBD	48.7%	48.7%
				Binding Antibody to Spike	(46.3%, 51.2%)	(46.3%)
	Day 57	245		PsV Neutralization 80% Titer	48.7%	48.7%
				Binding Antibody to RBD	(47.1%, 50.2%)	(47.1%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	67.5%	67.5%
				Binding Antibody to Spike	(55.6%, 79.4%)	(55.6%)
				PsV Neutralization 80% Titer	81.8%	81.8%
				Binding Antibody to RBD	(74.9%, 88.7%)	(74.9%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	91.5%	91.5%
				Binding Antibody to Spike	(85.8%, 97.3%)	(85.8%)
				PsV Neutralization 80% Titer	98.7%	98.7%
				Binding Antibody to RBD	(97.9%, 99.5%)	(97.9%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification (LLOQ) or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.7: Table 2f. Responder rates by Age, sex

Group	Baseline	Visit	N	Endpoint	Responder
Age, sex					
Age $\geq$ 65 Female					
	Negative	Day 29	291	Binding Antibody to RBD	51.4% (49.8%, 53.0%)
				Binding Antibody to Spike	51.4% (49.8%, 53.0%)
				PsV Neutralization 50% Titer	31.4% (27.0%, 35.9%)
				PsV Neutralization 80% Titer	38.6% (35.9%, 41.2%)
		Day 57	291	Binding Antibody to RBD	51.4% (49.8%, 53.0%)
				Binding Antibody to Spike	51.4% (49.8%, 53.0%)
				PsV Neutralization 50% Titer	48.6% (46.3%, 50.9%)
				PsV Neutralization 80% Titer	50.6% (49.0%, 52.2%)
	Positive	Day 29	166	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	56.7% (54.9%, 58.4%)
				PsV Neutralization 80% Titer	81.2% (77.5%, 84.8%)
		Day 57	166	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	87.5% (87.2%, 87.7%)
				PsV Neutralization 80% Titer	97.5% (96.7%, 98.2%)
Age $\geq$ 65 Male					
	Negative	Day 29	222	Binding Antibody to RBD	51.9% (50.2%, 53.7%)
				Binding Antibody to Spike	51.9% (50.2%, 53.7%)
				PsV Neutralization 50% Titer	31.7% (30.6%, 32.8%)
				PsV Neutralization 80% Titer	40.9% (40.7%, 41.2%)
		Day 57	222	Binding Antibody to RBD	51.9%

Table 2.7: Table 2f. Responder rates by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	128		Binding Antibody to Spike	(50.2%, 53.7%)	(50.2%)
				PsV Neutralization 50% Titer	51.9%	51.9%
				PsV Neutralization 80% Titer	(50.2%, 53.7%)	(50.2%)
				Binding Antibody to RBD	49.8%	49.8%
				Binding Antibody to Spike	(49.4%, 50.2%)	(49.4%)
	Day 57	128		PsV Neutralization 80% Titer	49.4%	49.4%
				Binding Antibody to RBD	(48.7%, 50.0%)	(48.7%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	62.9%	62.9%
Age $\geq$ 65 Female	Day 29	306		PsV Neutralization 80% Titer	(60.6%, 65.1%)	(60.6%)
				Binding Antibody to RBD	78.8%	78.8%
				Binding Antibody to Spike	(75.1%, 82.5%)	(75.1%)
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%)
	Day 57	306		Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	89.8%	89.8%
				PsV Neutralization 80% Titer	(86.2%, 93.4%)	(86.2%)
				Binding Antibody to RBD	98.7%	98.7%
				Binding Antibody to Spike	(97.7%, 99.7%)	(97.7%)
Positive	Day 29	132		Binding Antibody to RBD	53.8%	53.8%
				Binding Antibody to Spike	(53.8%, 53.8%)	(53.8%)
				PsV Neutralization 50% Titer	53.8%	53.8%
				PsV Neutralization 80% Titer	(53.8%, 53.8%)	(53.8%)
				Binding Antibody to RBD	44.3%	44.3%
	Day 57	306		Binding Antibody to Spike	(44.3%, 44.3%)	(44.3%)
				PsV Neutralization 50% Titer	50.1%	50.1%
				PsV Neutralization 80% Titer	(50.1%, 50.1%)	(50.1%)
				Binding Antibody to Spike	53.8%	53.8%
				PsV Neutralization 50% Titer	(53.8%, 53.8%)	(53.8%)
Negative	Day 29	306		PsV Neutralization 80% Titer	53.8%	53.8%
				Binding Antibody to RBD	(53.8%, 53.8%)	(53.8%)
				Binding Antibody to Spike	52.1%	52.1%
				PsV Neutralization 50% Titer	(52.1%, 52.1%)	(52.1%)
Positive	Day 29	132		PsV Neutralization 80% Titer	53.2%	53.2%
				Binding Antibody to RBD	(53.2%, 53.2%)	(53.2%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)

Table 2.7: Table 2f. Responder rates by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	Responder	
Age $\geq$ 65 Male	Negative	Day 29	243	PsV Neutralization 50% Titer	81.8% (81.8%, 81.8%)	
				PsV Neutralization 80% Titer	87.9% (87.9%, 87.9%)	
		Day 57	132	Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
		Day 29		Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	97.0% (97.0%, 97.0%)	
	Positive	Day 57	243	PsV Neutralization 80% Titer	98.5% (98.5%, 98.5%)	
				Binding Antibody to RBD	46.8% (46.8%, 46.8%)	
		Day 29		Binding Antibody to Spike	46.8% (46.8%, 46.8%)	
				PsV Neutralization 50% Titer	39.6% (39.6%, 39.6%)	
		Day 57		PsV Neutralization 80% Titer	42.0% (42.0%, 42.0%)	
				Binding Antibody to RBD	46.8% (46.8%, 46.8%)	
		Day 29	117	Binding Antibody to Spike	46.8% (46.8%, 46.8%)	
				PsV Neutralization 50% Titer	45.2% (45.2%, 45.2%)	
	Positive	Day 57	117	PsV Neutralization 80% Titer	46.3% (46.3%, 46.3%)	
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	84.5% (84.5%, 84.5%)	
				PsV Neutralization 80% Titer	92.7% (92.7%, 92.7%)	
		Day 29	117	Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	97.9% (97.9%, 97.9%)	
				PsV Neutralization 80% Titer	98.7%	

Table 2.7: Table 2f. Responder rates by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
					(98.7%, 98.7%)	(98.7%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.8: Table 2g. Responder rates by Hispanic or Latino ethnicity

Group	Baseline	Visit	N	Endpoint	Responder
Hispanic or Latino ethnicity					
Hispanic or Latino					
Negative	Day 29	125		Binding Antibody to RBD	46.0% (35.7%, 56.4%)
				Binding Antibody to Spike	46.0% (35.7%, 56.4%)
				PsV Neutralization 50% Titer	25.9% (10.8%, 41.0%)
				PsV Neutralization 80% Titer	37.0% (26.9%, 47.0%)
	Day 57	125		Binding Antibody to RBD	46.0% (35.7%, 56.4%)
				Binding Antibody to Spike	46.0% (35.7%, 56.4%)
				PsV Neutralization 50% Titer	45.1% (36.2%, 53.9%)
				PsV Neutralization 80% Titer	42.4% (30.9%, 54.0%)
Positive	Day 29	77		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	61.0% (53.6%, 68.3%)
				PsV Neutralization 80% Titer	81.2% (74.3%, 88.1%)
	Day 57	77		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	89.2% (86.4%, 91.9%)
				PsV Neutralization 80% Titer	96.3% (94.5%, 98.2%)
Not Hispanic or Latino	Negative	Day 29	844	Binding Antibody to RBD	53.4% (49.3%, 57.5%)
				Binding Antibody to Spike	53.4% (49.3%, 57.5%)
				PsV Neutralization 50% Titer	35.7% (30.0%, 41.4%)
				PsV Neutralization 80% Titer	42.8% (38.0%, 47.7%)
	Day 57	844		Binding Antibody to RBD	53.4%

Table 2.8: Table 2g. Responder rates by Hispanic or Latino ethnicity (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 29	406		Binding Antibody to Spike	(49.3%, 57.5%)	(49.3%)
				PsV Neutralization 50% Titer	53.4%	53.4%
				PsV Neutralization 80% Titer	(49.3%, 57.5%)	(49.3%)
				Binding Antibody to RBD	50.8%	50.8%
				Binding Antibody to Spike	(46.0%, 55.5%)	(46.0%)
	Day 57	406		PsV Neutralization 80% Titer	52.2%	52.2%
				Binding Antibody to RBD	(47.8%, 56.5%)	(47.8%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	64.9%	64.9%
Not reported and unknown	Day 29	93		Binding Antibody to Spike	(51.7%, 78.1%)	(51.7%)
				PsV Neutralization 50% Titer	80.5%	80.5%
				PsV Neutralization 80% Titer	(74.9%, 86.0%)	(74.9%)
				Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
	Day 57	93		PsV Neutralization 50% Titer	91.7%	91.7%
				PsV Neutralization 80% Titer	(87.3%, 96.2%)	(87.3%)
				Binding Antibody to RBD	98.9%	98.9%
				Binding Antibody to Spike	(98.1%, 99.6%)	(98.1%)
				PsV Neutralization 80% Titer	42.1%	42.1%
Positive	Day 29	60		Binding Antibody to RBD	(28.5%, 55.7%)	(28.5%)
				Binding Antibody to Spike	42.1%	42.1%
				PsV Neutralization 50% Titer	(28.5%, 55.7%)	(28.5%)
				PsV Neutralization 80% Titer	32.1%	32.1%
				Binding Antibody to RBD	(17.7%, 39.3%)	(17.7%)
	Day 57	60		Binding Antibody to Spike	(17.2%, 47.0%)	(17.2%)
				PsV Neutralization 50% Titer	42.1%	42.1%
				PsV Neutralization 80% Titer	(28.5%, 55.7%)	(28.5%)
				Binding Antibody to RBD	40.7%	40.7%
				Binding Antibody to Spike	(26.4%, 54.9%)	(26.4%)

Table 2.8: Table 2g. Responder rates by Hispanic or Latino ethnicity (continu

Group	Baseline	Visit	N	Endpoint	Responder
Day 57	60	PsV Neutralization 50% Titer	62.1%	(45.7%, 78.5%)	
		PsV Neutralization 80% Titer	95.3%	(86.7%, 103.9%)	
		Binding Antibody to RBD	100.0%	(100.0%, 100.0%)	
Day 60	60	Binding Antibody to Spike	100.0%	(100.0%, 100.0%)	
		PsV Neutralization 50% Titer	81.5%	(66.8%, 96.2%)	
Day 60	60	PsV Neutralization 80% Titer	95.6%	(91.7%, 99.5%)	

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantitation (LLOQ) and increased to a detectable neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in neutralization titer.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration and increased to a detectable binding antibody concentration above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling weights.

Table 2.9: Table 2h. Responder rates by Race

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
<b>Race</b>						
Not reported and unknown	Negative	Day 29	98	Binding Antibody to RBD	49.1% (43.4%, 54.8%)	49.1%
				Binding Antibody to Spike	49.1% (43.4%, 54.8%)	49.1%
				PsV Neutralization 50% Titer	31.3% (24.5%, 38.1%)	31.3%
				PsV Neutralization 80% Titer	38.3% (30.8%, 45.9%)	38.3%
		Day 57	98	Binding Antibody to RBD	49.1% (43.4%, 54.8%)	49.1%
				Binding Antibody to Spike	49.1% (43.4%, 54.8%)	49.1%
				PsV Neutralization 50% Titer	48.1% (41.2%, 55.0%)	48.1%
				PsV Neutralization 80% Titer	48.7% (42.0%, 55.4%)	48.7%
Positive	Day 29	48		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0%
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0%
				PsV Neutralization 50% Titer	63.6% (39.7%, 87.4%)	63.6%
				PsV Neutralization 80% Titer	81.8% (77.6%, 86.1%)	81.8%
		Day 57	48	Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0%
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0%
				PsV Neutralization 50% Titer	97.5% (93.5%, 101.5%)	97.5%
				PsV Neutralization 80% Titer	100.0% (100.0%, 100.0%)	100.0%
American Indian or Alaska Native	Negative	Day 29	27	Binding Antibody to RBD	49.5% (41.6%, 57.3%)	49.5%
				Binding Antibody to Spike	49.5% (41.6%, 57.3%)	49.5%
				PsV Neutralization 50% Titer	31.0% (21.8%, 40.3%)	31.0%
				PsV Neutralization 80% Titer	37.5% (31.5%, 43.5%)	37.5%

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder
Asian	Positive	Day 57	27	Binding Antibody to RBD	49.5% (41.6%, 57.3%)
				Binding Antibody to Spike	49.5% (41.6%, 57.3%)
				PsV Neutralization 50% Titer	48.6% (39.9%, 57.3%)
				PsV Neutralization 80% Titer	48.6% (39.9%, 57.3%)
		Day 29	17	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	78.4% (70.4%, 86.4%)
				PsV Neutralization 80% Titer	90.3% (64.8%, 115.7%)
		Day 57	17	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
	Negative			PsV Neutralization 50% Titer	96.9% (88.9%, 105.0%)
				PsV Neutralization 80% Titer	100.0% (100.0%, 100.0%)
		Day 29	84	Binding Antibody to RBD	58.2% (47.3%, 69.2%)
				Binding Antibody to Spike	58.2% (47.3%, 69.2%)
				PsV Neutralization 50% Titer	38.2% (35.2%, 41.1%)
	Positive			PsV Neutralization 80% Titer	51.9% (40.2%, 63.5%)
		Day 57	84	Binding Antibody to RBD	58.2% (47.3%, 69.2%)
				Binding Antibody to Spike	58.2% (47.3%, 69.2%)
				PsV Neutralization 50% Titer	57.2% (44.1%, 70.3%)
				PsV Neutralization 80% Titer	57.3% (46.0%, 68.7%)
	Positive	Day 29	46	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0%

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Black or African American	Negative	Day 29	216	PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	56.3%	56.3%
				PsV Neutralization 80% Titer	(26.7%, 85.9%)	(26.7%)
		Day 57	46	PsV Neutralization 80% Titer	73.1%	73.1%
				Binding Antibody to RBD	(53.7%, 92.6%)	(53.7%)
				Binding Antibody to RBD	100.0%	100.0%
	Positive	Day 29	91	Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
		Day 57	216	PsV Neutralization 50% Titer	84.2%	84.2%
				PsV Neutralization 80% Titer	(72.1%, 96.4%)	(72.1%)
				PsV Neutralization 80% Titer	95.0%	95.0%
				Binding Antibody to RBD	(90.3%, 99.7%)	(90.3%)
				Binding Antibody to RBD	51.5%	51.5%
				Binding Antibody to Spike	(50.4%, 52.6%)	(50.4%)
				Binding Antibody to Spike	51.5%	51.5%
				PsV Neutralization 50% Titer	(50.4%, 52.6%)	(50.4%)
				PsV Neutralization 50% Titer	32.9%	32.9%
				PsV Neutralization 80% Titer	(27.1%, 38.8%)	(27.1%)
				PsV Neutralization 80% Titer	39.5%	39.5%
				Binding Antibody to RBD	(33.8%, 45.3%)	(33.8%)
				Binding Antibody to RBD	51.5%	51.5%
				Binding Antibody to Spike	(50.4%, 52.6%)	(50.4%)
				Binding Antibody to Spike	51.5%	51.5%
				PsV Neutralization 50% Titer	(50.4%, 52.6%)	(50.4%)
				PsV Neutralization 50% Titer	46.2%	46.2%
				PsV Neutralization 80% Titer	(42.0%, 50.3%)	(42.0%)
				PsV Neutralization 80% Titer	49.6%	49.6%
				Binding Antibody to RBD	(48.3%, 50.8%)	(48.3%)
				Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	57.5%	57.5%
				PsV Neutralization 80% Titer	(45.2%, 69.7%)	(45.2%)
				PsV Neutralization 80% Titer	81.2%	81.2%
				Binding Antibody to RBD	(69.8%, 92.7%)	(69.8%)
				Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	93.2%	93.2%
				PsV Neutralization 50% Titer	(89.9%, 96.6%)	(89.9%)

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder	
Multiracial	Negative	Day 29	62	PsV Neutralization 80% Titer	98.7% (96.2%, 101.2%)	
				Binding Antibody to RBD	37.1% (23.9%, 50.3%)	
		Day 57		Binding Antibody to Spike	37.1% (23.9%, 50.3%)	
				PsV Neutralization 50% Titer	17.7% (0.6%, 34.9%)	
				PsV Neutralization 80% Titer	28.6% (16.3%, 40.8%)	
	Positive	Day 29	28	Binding Antibody to RBD	37.1% (23.9%, 50.3%)	
				Binding Antibody to Spike	37.1% (23.9%, 50.3%)	
		Day 57		PsV Neutralization 50% Titer	37.1% (23.9%, 50.3%)	
				PsV Neutralization 80% Titer	37.1% (23.9%, 50.3%)	
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
Native Hawaiian or Other Pacific Islander	Negative	Day 29	20	Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
				PsV Neutralization 50% Titer	71.6% (63.3%, 79.9%)	
		Day 57		PsV Neutralization 80% Titer	89.3% (82.6%, 96.0%)	
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	
	Positive	Day 29	20	PsV Neutralization 50% Titer	85.8% (74.4%, 97.3%)	
				PsV Neutralization 80% Titer	100.0% (100.0%, 100.0%)	
		Day 57		Binding Antibody to RBD	66.0% (20.6%, 111.3%)	
				Binding Antibody to Spike	66.0% (20.6%, 111.3%)	
				PsV Neutralization 50% Titer	45.5% (26.4%, 64.7%)	

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
Positive	Day 57	20	Binding Antibody to RBD	66.0%	66.0%	66.0%
			(20.6%, 111.3%)	(20.6%)	(20.6%)	(20.6%)
			Binding Antibody to Spike	66.0%	66.0%	66.0%
			(20.6%, 111.3%)	(20.6%)	(20.6%)	(20.6%)
			PsV Neutralization 50% Titer	66.0%	66.0%	66.0%
	Day 29	7	(20.6%, 111.3%)	(20.6%)	(20.6%)	(20.6%)
			Binding Antibody to RBD	66.0%	66.0%	66.0%
			(20.6%, 111.3%)	(20.6%)	(20.6%)	(20.6%)
			Binding Antibody to Spike	100.0%	100.0%	100.0%
			(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
Other	Day 57	7	PsV Neutralization 50% Titer	91.4%	91.4%	91.4%
			(76.1%, 106.7%)	(76.1%)	(76.1%)	(76.1%)
			PsV Neutralization 80% Titer	100.0%	100.0%	100.0%
			(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
			Binding Antibody to RBD	100.0%	100.0%	100.0%
	Day 29	28	(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
			Binding Antibody to Spike	100.0%	100.0%	100.0%
			(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
			PsV Neutralization 50% Titer	89.1%	89.1%	89.1%
			(60.6%, 117.6%)	(60.6%)	(60.6%)	(60.6%)
Positive	Day 57	28	PsV Neutralization 80% Titer	100.0%	100.0%	100.0%
			(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
			Binding Antibody to RBD	79.8%	79.8%	79.8%
			(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			Binding Antibody to Spike	79.8%	79.8%	79.8%
	Day 29	24	(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			PsV Neutralization 50% Titer	59.3%	59.3%	59.3%
			(39.3%, 79.2%)	(39.3%)	(39.3%)	(39.3%)
			PsV Neutralization 80% Titer	53.8%	53.8%	53.8%
			(44.2%, 63.3%)	(44.2%)	(44.2%)	(44.2%)
Positive	Day 57	28	Binding Antibody to RBD	79.8%	79.8%	79.8%
			(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			Binding Antibody to Spike	79.8%	79.8%	79.8%
			(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			PsV Neutralization 50% Titer	77.2%	77.2%	77.2%
	Day 29	24	(44.4%, 110.0%)	(44.4%)	(44.4%)	(44.4%)
			PsV Neutralization 80% Titer	67.6%	67.6%	67.6%
			(49.3%, 85.8%)	(49.3%)	(49.3%)	(49.3%)
			Binding Antibody to RBD	100.0%	100.0%	100.0%
			(100.0%, 100.0%)	(100.0%)	(100.0%)	(100.0%)
Other	Day 57	28	Binding Antibody to Spike	100.0%	100.0%	100.0%
			(100.0%)	(100.0%)	(100.0%)	(100.0%)
			Binding Antibody to RBD	79.8%	79.8%	79.8%
			(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			Binding Antibody to Spike	79.8%	79.8%	79.8%
	Day 29	24	(45.4%, 114.3%)	(45.4%)	(45.4%)	(45.4%)
			PsV Neutralization 50% Titer	59.3%	59.3%	59.3%
			(39.3%, 79.2%)	(39.3%)	(39.3%)	(39.3%)
			PsV Neutralization 80% Titer	53.8%	53.8%	53.8%
			(44.2%, 63.3%)	(44.2%)	(44.2%)	(44.2%)

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder
White	Negative	Day 29	43	PsV Neutralization 50% Titer	(100.0%, 100.0%)
				PsV Neutralization 80% Titer	55.8% (43.9%, 67.7%)
		Day 57	24	Binding Antibody to RBD	82.9% (76.1%, 89.7%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	100.0% (100.0%, 100.0%)
	Positive	Day 29	38	PsV Neutralization 80% Titer	90.4% (87.7%, 93.2%)
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)
		Day 57	43	Binding Antibody to Spike	47.0% (31.9%, 62.0%)
				PsV Neutralization 50% Titer	47.0% (31.9%, 62.0%)
				PsV Neutralization 80% Titer	35.1% (25.2%, 45.0%)
		Day 57	38	Binding Antibody to RBD	38.7% (20.7%, 56.7%)
				Binding Antibody to Spike	47.0% (31.9%, 62.0%)
				PsV Neutralization 50% Titer	43.3% (26.8%, 59.8%)
				PsV Neutralization 80% Titer	47.0% (31.9%, 62.0%)
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)
		Day 29	38	Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	68.1% (52.8%, 83.4%)
				PsV Neutralization 80% Titer	96.2% (89.1%, 103.3%)
	Black	Day 29	38	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
		Day 57	38	PsV Neutralization 50% Titer	78.4% (62.2%, 94.5%)

Table 2.9: Table 2h. Responder rates by Race (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
White Non-Hispanic	Negative	Day 29	456	PsV Neutralization 80% Titer	93.7% (87.0%, 100.5%)	93.7% (87.0%)
				Binding Antibody to RBD	52.3% (49.2%, 55.5%)	52.3% (49.2%)
		Day 57	456	Binding Antibody to Spike	52.3% (49.2%, 55.5%)	52.3% (49.2%)
				PsV Neutralization 50% Titer	36.0% (29.5%, 42.5%)	36.0% (29.5%)
				PsV Neutralization 80% Titer	42.2% (38.0%, 46.5%)	42.2% (38.0%)
	Positive	Day 29	224	Binding Antibody to RBD	52.3% (49.2%, 55.5%)	52.3% (49.2%)
				Binding Antibody to Spike	52.3% (49.2%, 55.5%)	52.3% (49.2%)
		Day 57	224	PsV Neutralization 50% Titer	50.5% (45.9%, 55.2%)	50.5% (45.9%)
				PsV Neutralization 80% Titer	51.4% (48.1%, 54.6%)	51.4% (48.1%)
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				PsV Neutralization 50% Titer	65.2% (54.5%, 75.9%)	65.2% (54.5%)
				PsV Neutralization 80% Titer	79.8% (76.2%, 83.4%)	79.8% (76.2%)
				Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				PsV Neutralization 50% Titer	91.8% (87.1%, 96.5%)	91.8% (87.1%)
				PsV Neutralization 80% Titer	98.1% (97.4%, 98.9%)	98.1% (97.4%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification (LLOQ) or as participants with baseline values above the LLOQ with a 4-fold increase in neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in neutralization titer above the assay LLOQ.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.10: Table 2i. Responder rates by Race and ethnic group

Group	Baseline	Visit	N	Endpoint	Responder
Race and ethnic group					
White Non-Hispanic					
	Negative	Day 29	456	Binding Antibody to RBD	52.3% (49.2%, 55.5%)
				Binding Antibody to Spike	52.3% (49.2%, 55.5%)
				PsV Neutralization 50% Titer	36.0% (29.5%, 42.5%)
				PsV Neutralization 80% Titer	42.2% (38.0%, 46.5%)
		Day 57	456	Binding Antibody to RBD	52.3% (49.2%, 55.5%)
				Binding Antibody to Spike	52.3% (49.2%, 55.5%)
				PsV Neutralization 50% Titer	50.5% (45.9%, 55.2%)
				PsV Neutralization 80% Titer	51.4% (48.1%, 54.6%)
	Positive	Day 29	224	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	65.2% (54.5%, 75.9%)
				PsV Neutralization 80% Titer	79.8% (76.2%, 83.4%)
		Day 57	224	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	91.8% (87.1%, 96.5%)
				PsV Neutralization 80% Titer	98.1% (97.4%, 98.9%)
Communities of Color	Negative	Day 29	535	Binding Antibody to RBD	51.1% (50.5%, 51.6%)
				Binding Antibody to Spike	51.1% (50.5%, 51.6%)
				PsV Neutralization 50% Titer	32.2% (25.9%, 38.4%)
				PsV Neutralization 80% Titer	40.4% (36.2%, 44.5%)
		Day 57	535	Binding Antibody to RBD	51.1%

Table 2.10: Table 2i. Responder rates by Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
				Binding Antibody to Spike	(50.5%, 51.6%)	(50.5%)
				PsV Neutralization 50% Titer	51.1%	51.1%
				PsV Neutralization 80% Titer	(50.5%, 51.6%)	(50.5%)
				Binding Antibody to RBD	48.4%	48.4%
				Binding Antibody to Spike	(48.1%, 48.6%)	(48.1%)
				PsV Neutralization 50% Titer	49.6%	49.6%
				PsV Neutralization 80% Titer	(49.3%, 50.0%)	(49.3%)
Positive	Day 29	261		Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	61.8%	61.8%
				PsV Neutralization 80% Titer	(47.3%, 76.3%)	(47.3%)
	Day 57	261		Binding Antibody to RBD	82.0%	82.0%
				Binding Antibody to Spike	(74.7%, 89.3%)	(74.7%)
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%)
				Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	91.2%	91.2%
				PsV Neutralization 80% Titer	(86.8%, 95.7%)	(86.8%)
				Binding Antibody to RBD	98.7%	98.7%
				Binding Antibody to Spike	(98.6%, 98.7%)	(98.6%)

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification (LLOQ) or as participants with baseline values above the LLOQ with a 4-fold increase in neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.11: Table 2j. Responder rates by Age, Race and ethnic group

Group	Baseline	Visit	N	Endpoint	Responder
Age, Race and ethnic group					
Age ≥ 65 Communities of Color	Negative	Day 29	253	Binding Antibody to RBD	51.3%
		Day 57	253	Binding Antibody to Spike	(51.1%, 51.5%)
				PsV Neutralization 50% Titer	51.3%
				PsV Neutralization 80% Titer	(51.1%, 51.5%)
	Positive	Day 29	148	Binding Antibody to RBD	29.6%
				Binding Antibody to Spike	(29.3%, 30.0%)
				PsV Neutralization 50% Titer	38.6%
				PsV Neutralization 80% Titer	(37.1%, 40.1%)
Age ≥ 65 White Non-Hispanic	Negative	Day 29	227	Binding Antibody to RBD	51.3%
		Day 57	148	Binding Antibody to Spike	(51.1%, 51.5%)
				PsV Neutralization 50% Titer	51.3%
				PsV Neutralization 80% Titer	(51.1%, 51.5%)
	Positive	Day 29	148	Binding Antibody to RBD	48.3%
				Binding Antibody to Spike	(48.1%, 48.4%)
				PsV Neutralization 50% Titer	49.7%
				PsV Neutralization 80% Titer	(49.6%, 49.9%)
	Positive	Day 29	148	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)
	Positive	Day 29	227	Binding Antibody to RBD	56.4%
				Binding Antibody to Spike	(54.6%, 58.2%)
				PsV Neutralization 50% Titer	79.1%
				PsV Neutralization 80% Titer	(73.5%, 84.7%)
	Positive	Day 29	227	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)
	Positive	Day 29	227	Binding Antibody to RBD	89.6%
				Binding Antibody to Spike	(88.8%, 90.5%)
				PsV Neutralization 50% Titer	98.6%
				PsV Neutralization 80% Titer	(98.6%, 98.7%)
	Positive	Day 29	227	Binding Antibody to RBD	52.3%
				Binding Antibody to Spike	(48.4%, 56.3%)
				PsV Neutralization 50% Titer	52.3%
				PsV Neutralization 80% Titer	(48.4%, 56.3%)
	Positive	Day 29	227	Binding Antibody to RBD	33.8%
				Binding Antibody to Spike	(26.9%, 40.7%)
				PsV Neutralization 50% Titer	41.0%
				PsV Neutralization 80% Titer	(35.9%, 46.1%)

Table 2.11: Table 2j. Responder rates by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
		Day 57	227	Binding Antibody to RBD	52.3% (48.4%, 56.3%)	52.3%
				Binding Antibody to Spike	52.3% (48.4%, 56.3%)	52.3%
				PsV Neutralization 50% Titer	50.5% (44.7%, 56.4%)	50.5%
				PsV Neutralization 80% Titer	51.1% (46.8%, 55.4%)	51.1%
Positive	Day 29	117		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0%
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0%
				PsV Neutralization 50% Titer	61.0% (59.0%, 63.0%)	61.0%
				PsV Neutralization 80% Titer	78.4% (78.0%, 78.7%)	78.4%
Age $i = 65$ Communities of Color	Negative	Day 29	282	Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0%
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0%
				PsV Neutralization 50% Titer	90.3% (87.7%, 92.9%)	90.3%
				PsV Neutralization 80% Titer	97.9% (97.0%, 98.7%)	97.9%
		Day 57	117	Binding Antibody to RBD	50.2% (50.2%, 50.2%)	50.2%
				Binding Antibody to Spike	50.2% (50.2%, 50.2%)	50.2%
				PsV Neutralization 50% Titer	41.0% (41.0%, 41.0%)	41.0%
				PsV Neutralization 80% Titer	46.7% (46.7%, 46.7%)	46.7%
		Day 57	282	Binding Antibody to RBD	50.2% (50.2%, 50.2%)	50.2%
				Binding Antibody to Spike	50.2% (50.2%, 50.2%)	50.2%
				PsV Neutralization 50% Titer	48.8% (48.8%, 48.8%)	48.8%
				PsV Neutralization 80% Titer	49.2% (49.2%, 49.2%)	49.2%
Positive	Day 29	113		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0%

Table 2.11: Table 2j. Responder rates by Age, Race and ethnic group (contin)

Group	Baseline	Visit	N	Endpoint	Responder
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	86.7% (86.7%, 86.7%)
				PsV Neutralization 80% Titer	95.1% (95.1%, 95.1%)
	Day 57	113		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
Age $\geq$ 65 White Non-Hispanic	Negative	Day 29	229	Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	98.7% (98.7%, 98.7%)
				PsV Neutralization 80% Titer	98.7% (98.7%, 98.7%)
				Binding Antibody to RBD	52.3% (52.3%, 52.3%)
				Binding Antibody to Spike	52.3% (52.3%, 52.3%)
				PsV Neutralization 50% Titer	44.8% (44.8%, 44.8%)
				PsV Neutralization 80% Titer	47.0% (47.0%, 47.0%)
	Day 57	229		Binding Antibody to RBD	52.3% (52.3%, 52.3%)
				Binding Antibody to Spike	52.3% (52.3%, 52.3%)
				PsV Neutralization 50% Titer	50.5% (50.5%, 50.5%)
				PsV Neutralization 80% Titer	52.3% (52.3%, 52.3%)
	Positive	Day 29	107	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	80.4% (80.4%, 80.4%)
				PsV Neutralization 80% Titer	85.0% (85.0%, 85.0%)
	Day 57	107		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)

Table 2.11: Table 2j. Responder rates by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	Responder	2-Fold
				PsV Neutralization 50% Titer	97.2% (97.2%, 97.2%)	97.2%
				PsV Neutralization 80% Titer	99.1% (99.1%, 99.1%)	99.1%

Neutralization Responders are defined as participants who had baseline values below the lower limit of quantification, neutralization titer above the assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase.

Binding Antibody Responders are defined as participants who had baseline values below the LLOQ with detectable antibody concentration, assay LLOQ, or as participants with baseline values above the LLOQ with a 4-fold increase in antibody concentration.

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

2.0.3 Table 3. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs)

Table 2.12: Table 3a. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by All participants

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95
All participants						
All participants	Negative	Day 1	1062	Binding Antibody to RBD	17	(1)
				Binding Antibody to Spike	17	(1)
				PsV Neutralization 50% Titer	24	(2)
				PsV Neutralization 80% Titer	22	(2)
		Day 29	1062	Binding Antibody to RBD	712	(5)
				Binding Antibody to Spike	982	(7)
				PsV Neutralization 50% Titer	56	(4)
				PsV Neutralization 80% Titer	71	(5)
		Day 57	1062	Binding Antibody to RBD	4931	(3)
				Binding Antibody to Spike	7432	(5)
				PsV Neutralization 50% Titer	225	(1)
				PsV Neutralization 80% Titer	263	(2)
	Positive	Day 1	543	Binding Antibody to RBD	17	(1)
				Binding Antibody to Spike	17	(1)
				PsV Neutralization 50% Titer	24	(2)
				PsV Neutralization 80% Titer	22	(2)
		Day 29	543	Binding Antibody to RBD	22509	(1)
				Binding Antibody to Spike	38829	(1)
				PsV Neutralization 50% Titer	114	(6)
				PsV Neutralization 80% Titer	229	(1)
		Day 57	543	Binding Antibody to RBD	1120836	(5)
				Binding Antibody to Spike	2091817	(1)
				PsV Neutralization 50% Titer	1665	(6)
				PsV Neutralization 80% Titer	3728	(2)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.13: Table 3b. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
<b>Age</b>						
Age $j \leq 65$	Negative	Day 1	513	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	513	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Positive	Day 1	513	Binding Antibody to RBD	621	(585, 659)
				Binding Antibody to Spike	865	(807, 926)
		Day 29	513	PsV Neutralization 50% Titer	50	(48, 53)
				PsV Neutralization 80% Titer	65	(60, 70)
	Positive	Day 1	294	Binding Antibody to RBD	4352	(4139, 4577)
				Binding Antibody to Spike	6696	(6197, 7235)
		Day 29	294	PsV Neutralization 50% Titer	196	(184, 209)
				PsV Neutralization 80% Titer	237	(215, 261)
Age $i = 65$	Negative	Day 1	549	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	549	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Positive	Day 1	294	Binding Antibody to RBD	17189	(16844, 175)
				Binding Antibody to Spike	29915	(28129, 318)
		Day 29	294	PsV Neutralization 50% Titer	92	(81, 105)
				PsV Neutralization 80% Titer	190	(188, 193)
	Positive	Day 1	294	Binding Antibody to RBD	848266	(817139, 880)
				Binding Antibody to Spike	1607999	(1544200, 18)
		Day 29	294	PsV Neutralization 50% Titer	1174	(1093, 1261)
				PsV Neutralization 80% Titer	2971	(2943, 2998)

Table 2.13: Table 3b. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI Lower	95% CI Upper
		Day 29	249	Binding Antibody to RBD	67301	(67,000)	(67,000)
				Binding Antibody to Spike	112025	(112,000)	(112,000)
				PsV Neutralization 50% Titer	265	(26,000)	(26,000)
				PsV Neutralization 80% Titer	484	(48,000)	(48,000)
		Day 57	249	Binding Antibody to RBD	3476290	(347,6290)	(347,6290)
				Binding Antibody to Spike	6089580	(608,9580)	(608,9580)
				PsV Neutralization 50% Titer	6890	(68,900)	(68,900)
				PsV Neutralization 80% Titer	9374	(93,740)	(93,740)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.14: Table 3c. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Risk for Severe Covid-19						
At-risk	Negative	Day 1	541	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	541	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Positive	Day 1	541	Binding Antibody to RBD	778	(411, 1471)
				Binding Antibody to Spike	1068	(564, 2022)
		Day 29	541	PsV Neutralization 50% Titer	59	(38, 91)
				PsV Neutralization 80% Titer	72	(46, 112)
	Positive	Day 1	246	Binding Antibody to RBD	5533	(2908, 1052)
				Binding Antibody to Spike	8028	(4405, 1463)
		Day 29	246	PsV Neutralization 50% Titer	235	(134, 411)
				PsV Neutralization 80% Titer	274	(153, 490)
Not at-risk	Negative	Day 1	246	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	246	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	21	(21, 22)
	Positive	Day 1	246	Binding Antibody to RBD	25128	(9811, 6435)
				Binding Antibody to Spike	46636	(20642, 1055)
		Day 29	246	PsV Neutralization 50% Titer	139	(83, 234)
				PsV Neutralization 80% Titer	252	(138, 461)
	Positive	Day 1	246	Binding Antibody to RBD	1379449	(511168, 375)
				Binding Antibody to Spike	2471668	(1053363, 575)
		Day 29	246	PsV Neutralization 50% Titer	2118	(693, 6480)
				PsV Neutralization 80% Titer	4084	(1906, 8751)

Table 2.14: Table 3c. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
	Day 29	297	Binding Antibody to RBD	21738	(11)	
			Binding Antibody to Spike	36642	(19)	
			PsV Neutralization 50% Titer	106	(61)	
			PsV Neutralization 80% Titer	222	(14)	
	Day 57	297	Binding Antibody to RBD	1049555	(54)	
			Binding Antibody to Spike	1984211	(10)	
			PsV Neutralization 50% Titer	1543	(65)	
			PsV Neutralization 80% Titer	3622	(20)	

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.15: Table 3d. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Age, Risk for Severe Covid-19						
Age $\geq$ 65 At-risk				Binding Antibody to RBD	17	(17, 17)
	Negative	Day 1	257	Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	21	(21, 22)
		Day 29	257	Binding Antibody to RBD	572	(572, 572)
				Binding Antibody to Spike	786	(786, 786)
				PsV Neutralization 50% Titer	48	(48, 48)
				PsV Neutralization 80% Titer	58	(58, 58)
		Day 57	257	Binding Antibody to RBD	4058	(4058, 4058)
				Binding Antibody to Spike	6011	(6011, 6011)
				PsV Neutralization 50% Titer	180	(180, 180)
				PsV Neutralization 80% Titer	207	(207, 207)
	Positive	Day 1	148	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	21	(21, 22)
		Day 29	148	Binding Antibody to RBD	16690	(16690, 16690)
				Binding Antibody to Spike	32712	(32712, 32712)
				PsV Neutralization 50% Titer	111	(111, 111)
				PsV Neutralization 80% Titer	194	(194, 194)
		Day 57	148	Binding Antibody to RBD	895596	(895596, 895596)
				Binding Antibody to Spike	1705379	(1705379, 1705379)
				PsV Neutralization 50% Titer	1302	(1302, 1302)
				PsV Neutralization 80% Titer	2931	(2931, 2931)
Age $\geq$ 65 Not at-risk	Negative	Day 1	256	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	25	(24, 25)
				PsV Neutralization 80% Titer	22	(22, 22)
		Day 29	256	Binding Antibody to RBD	635	(635, 635)
				Binding Antibody to Spike	887	(887, 887)
				PsV Neutralization 50% Titer	51	(51, 51)
				PsV Neutralization 80% Titer	67	(67, 67)
		Day 57	256	Binding Antibody to RBD	4435	(4435, 4435)
				Binding Antibody to Spike	6892	(6892, 6892)
				PsV Neutralization 50% Titer	201	(201, 201)
				PsV Neutralization 80% Titer	246	(246, 246)
	Positive	Day 1	146	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 25)
				PsV Neutralization 80% Titer	21	(21, 22)

Table 2.15: Table 3d. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Age $i = 65$ At-risk	Negative	Day 29	146	Binding Antibody to RBD	17319	(17)
				Binding Antibody to Spike	29242	(29)
				PsV Neutralization 50% Titer	88	(88)
				PsV Neutralization 80% Titer	189	(189)
		Day 57	146	Binding Antibody to RBD	836628	(836)
				Binding Antibody to Spike	1584123	(158)
	Positive	Day 1	284	PsV Neutralization 50% Titer	1143	(114)
				PsV Neutralization 80% Titer	2981	(298)
		Day 29	284	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
		Day 57	284	PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
Age $i = 65$ Not at-risk	Negative	Day 1	98	Binding Antibody to RBD	1260	(126)
				Binding Antibody to Spike	1733	(173)
		Day 29	98	PsV Neutralization 50% Titer	82	(82)
				PsV Neutralization 80% Titer	100	(100)
		Day 57	98	Binding Antibody to RBD	9007	(900)
				Binding Antibody to Spike	12651	(1265)
	Positive	Day 1	98	PsV Neutralization 50% Titer	359	(359)
				PsV Neutralization 80% Titer	425	(425)
		Day 29	98	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
		Day 57	98	PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
Age $i = 65$ Not at-risk	Negative	Day 1	265	Binding Antibody to RBD	59244	(592)
				Binding Antibody to Spike	98073	(980)
		Day 29	265	PsV Neutralization 50% Titer	223	(223)
				PsV Neutralization 80% Titer	437	(437)
		Day 57	265	Binding Antibody to RBD	3411234	(3411)
				Binding Antibody to Spike	5380342	(5380)
	Positive	Day 1	265	PsV Neutralization 50% Titer	5873	(5873)
				PsV Neutralization 80% Titer	8184	(8184)
		Day 29	265	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
		Day 57	265	PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)

Table 2.15: Table 3d. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Positive	Day 1	151	PsV Neutralization 50% Titer	385	(385, 385)	
			PsV Neutralization 80% Titer	343	(343, 343)	
			Binding Antibody to RBD	17	(17, 17)	
			Binding Antibody to Spike	17	(17, 17)	
			PsV Neutralization 50% Titer	24	(24, 24)	
			PsV Neutralization 80% Titer	22	(22, 22)	
	Day 29	151	Binding Antibody to RBD	73095	(73095, 73095)	
			Binding Antibody to Spike	122104	(122104, 122104)	
			PsV Neutralization 50% Titer	296	(296, 296)	
	Day 57	151	PsV Neutralization 80% Titer	518	(518, 518)	
			Binding Antibody to RBD	3519087	(3519087, 3519087)	
			Binding Antibody to Spike	6598095	(6598095, 6598095)	
			PsV Neutralization 50% Titer	7640	(7640, 7640)	
			PsV Neutralization 80% Titer	10236	(10236, 10236)	

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.16: Table 3e. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Sex

Group		Baseline	Visit	N	Endpoint	GMT/GMC	95%		
Sex									
Female	Negative	Day 1	597	Binding Antibody to RBD	17	(17)			
				Binding Antibody to Spike	17	(17)			
				PsV Neutralization 50% Titer	24	(24)			
		Day 29	597	PsV Neutralization 80% Titer	22	(22)			
				Binding Antibody to RBD	712	(44)			
				Binding Antibody to Spike	1038	(66)			
	Positive	Day 57	597	PsV Neutralization 50% Titer	56	(42)			
				PsV Neutralization 80% Titer	71	(55)			
				Binding Antibody to RBD	5346	(33)			
		Day 29	298	Binding Antibody to Spike	7938	(50)			
				PsV Neutralization 50% Titer	218	(14)			
				PsV Neutralization 80% Titer	271	(19)			
Male	Negative	Day 1	465	Binding Antibody to RBD	17	(17)			
				Binding Antibody to Spike	17	(17)			
				PsV Neutralization 50% Titer	24	(24)			
		Day 29	465	PsV Neutralization 80% Titer	21	(21)			
	Positive			Binding Antibody to RBD	21334	(11)			
				Binding Antibody to Spike	35333	(18)			
				PsV Neutralization 50% Titer	114	(75)			
	Day 57	465	PsV Neutralization 80% Titer	232	(17)				
			Binding Antibody to RBD	1087218	(56)				
			Binding Antibody to Spike	2053878	(11)				
			PsV Neutralization 50% Titer	1624	(70)				
			PsV Neutralization 80% Titer	3631	(21)				

Table 2.16: Table 3e. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Sex (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
		Day 29	245	Binding Antibody to RBD	24161	(11946, 48800)
				Binding Antibody to Spike	43983	(21721, 89000)
				PsV Neutralization 50% Titer	112	(52, 245)
				PsV Neutralization 80% Titer	225	(109, 464)
		Day 57	245	Binding Antibody to RBD	1166837	(528077, 250000)
				Binding Antibody to Spike	2143002	(1014552, 480000)
				PsV Neutralization 50% Titer	1722	(620, 4779)
				PsV Neutralization 80% Titer	3859	(1838, 8103)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.17: Table 3f. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, sex

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Age, sex						
Age ≥ 65 Female						
	Negative	Day 1	291	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
		Day 29	291	Binding Antibody to RBD	582	(49)
				Binding Antibody to Spike	860	(69)
				PsV Neutralization 50% Titer	49	(45)
				PsV Neutralization 80% Titer	63	(57)
		Day 57	291	Binding Antibody to RBD	4372	(34)
				Binding Antibody to Spike	6537	(51)
				PsV Neutralization 50% Titer	181	(16)
				PsV Neutralization 80% Titer	236	(20)
	Positive	Day 1	166	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
		Day 29	166	Binding Antibody to RBD	16489	(15)
				Binding Antibody to Spike	27584	(27)
				PsV Neutralization 50% Titer	97	(95)
				PsV Neutralization 80% Titer	206	(18)
		Day 57	166	Binding Antibody to RBD	829179	(71)
				Binding Antibody to Spike	1596315	(14)
				PsV Neutralization 50% Titer	1152	(95)
				PsV Neutralization 80% Titer	2917	(21)
Age < 65 Male						
	Negative	Day 1	222	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
		Day 29	222	Binding Antibody to RBD	676	(61)
				Binding Antibody to Spike	871	(77)
				PsV Neutralization 50% Titer	52	(50)
				PsV Neutralization 80% Titer	67	(64)
		Day 57	222	Binding Antibody to RBD	4327	(36)
				Binding Antibody to Spike	6909	(59)
				PsV Neutralization 50% Titer	217	(21)
				PsV Neutralization 80% Titer	238	(22)
	Positive	Day 1	128	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)

Table 2.17: Table 3f. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Age $i = 65$ Female	Negative	Day 29	128	Binding Antibody to RBD	18199	(17074, 19339)
				Binding Antibody to Spike	33432	(29168, 38332)
		Day 57	128	PsV Neutralization 50% Titer	86	(61, 122)
				PsV Neutralization 80% Titer	171	(144, 204)
		Day 29	306	Binding Antibody to RBD	875142	(661880, 1157)
				Binding Antibody to Spike	1624152	(1290202, 2024152)
	Positive	Day 1	306	PsV Neutralization 50% Titer	1205	(785, 1850)
				PsV Neutralization 80% Titer	3046	(2012, 4611)
		Day 29	306	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 57	306	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
Age $i = 65$ Male	Negative	Day 1	132	Binding Antibody to RBD	1557	(1557, 1557)
				Binding Antibody to Spike	2159	(2159, 2159)
		Day 29	132	PsV Neutralization 50% Titer	91	(91, 91)
				PsV Neutralization 80% Titer	109	(109, 109)
		Day 57	132	Binding Antibody to RBD	11651	(11651, 11651)
				Binding Antibody to Spike	16857	(16857, 16857)
	Positive	Day 1	132	PsV Neutralization 50% Titer	449	(449, 449)
				PsV Neutralization 80% Titer	459	(459, 459)
		Day 29	132	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 57	132	PsV Neutralization 50% Titer	25	(24, 25)
				PsV Neutralization 80% Titer	22	(22, 22)
	Male	Day 1	243	Binding Antibody to RBD	66473	(66473, 66473)
				Binding Antibody to Spike	105315	(105315, 105315)
		Day 29	243	PsV Neutralization 50% Titer	238	(238, 238)
				PsV Neutralization 80% Titer	391	(391, 391)
		Day 57	243	Binding Antibody to RBD	3592671	(3592671, 3592671)
				Binding Antibody to Spike	6243753	(6243753, 6243753)
		Day 29	243	PsV Neutralization 50% Titer	7379	(7379, 7379)
				PsV Neutralization 80% Titer	9539	(9539, 9539)
		Day 57	243	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	243	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
		Day 57	243	Binding Antibody to RBD	846	(846, 846)
				Binding Antibody to Spike	1076	(1076, 1076)
		Day 29	243	PsV Neutralization 50% Titer	79	(79, 79)
				PsV Neutralization 80% Titer	94	(94, 94)
		Day 57	243	Binding Antibody to RBD	4908	(4908, 4908)
				Binding Antibody to Spike	6613	(6613, 6613)

Table 2.17: Table 3f. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Positive	Day 1	117	PsV Neutralization 50% Titer	301	(301)	
			PsV Neutralization 80% Titer	309	(309)	
			Binding Antibody to RBD	17	(17)	
			Binding Antibody to Spike	17	(17)	
			PsV Neutralization 50% Titer	24	(24)	
			PsV Neutralization 80% Titer	22	(22)	
	Day 29	117	Binding Antibody to RBD	68256	(68256)	
			Binding Antibody to Spike	120187	(120187)	
			PsV Neutralization 50% Titer	300	(300)	
	Day 57	117	PsV Neutralization 80% Titer	618	(618)	
			Binding Antibody to RBD	3348376	(3348376)	
			Binding Antibody to Spike	5918688	(5918688)	
			PsV Neutralization 50% Titer	6372	(6372)	
			PsV Neutralization 80% Titer	9190	(9190)	

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.18: Table 3g. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Hispanic or Latino ethnicity

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Hispanic or Latino ethnicity						
Hispanic or Latino	Negative	Day 1	125	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Day 29	125	125	Binding Antibody to RBD	468	(143, 1532)
				Binding Antibody to Spike	640	(202, 2027)
				PsV Neutralization 50% Titer	49	(29, 82)
				PsV Neutralization 80% Titer	60	(38, 93)
	Day 57	125	125	Binding Antibody to RBD	2630	(611, 11319)
				Binding Antibody to Spike	3871	(887, 16897)
				PsV Neutralization 50% Titer	181	(80, 409)
				PsV Neutralization 80% Titer	161	(60, 433)
Not Hispanic or Latino	Positive	Day 1	77	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Day 29	77	77	Binding Antibody to RBD	25213	(15602, 407)
				Binding Antibody to Spike	40456	(26282, 622)
				PsV Neutralization 50% Titer	116	(74, 180)
				PsV Neutralization 80% Titer	195	(127, 299)
	Day 57	77	77	Binding Antibody to RBD	1404743	(886268, 22)
				Binding Antibody to Spike	2250797	(1632173, 3)
				PsV Neutralization 50% Titer	1802	(821, 3955)
				PsV Neutralization 80% Titer	3289	(2051, 5275)

Table 2.18: Table 3g. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Hispanic or Latino ethnicity (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Not reported and unknown	Negative	Day 29	406	Binding Antibody to RBD	22503	(11)
				Binding Antibody to Spike	40053	(19)
				PsV Neutralization 50% Titer	117	(66)
				PsV Neutralization 80% Titer	234	(14)
		Day 57	406	Binding Antibody to RBD	1125831	(53)
				Binding Antibody to Spike	2007106	(94)
				PsV Neutralization 50% Titer	1735	(71)
	Positive	Day 1	93	PsV Neutralization 80% Titer	4085	(24)
				Binding Antibody to RBD	17	(17)
		Day 29	93	Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
		Day 57	93	PsV Neutralization 80% Titer	21	(21)
				Binding Antibody to RBD	345	(12)
				Binding Antibody to Spike	461	(15)
				PsV Neutralization 50% Titer	50	(39)
				PsV Neutralization 80% Titer	62	(44)
				Binding Antibody to RBD	1730	(34)
				Binding Antibody to Spike	2841	(55)
				PsV Neutralization 50% Titer	144	(74)
				PsV Neutralization 80% Titer	152	(74)
		Day 1	60	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
		Day 29	60	PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
		Day 57	60	Binding Antibody to RBD	18882	(77)
				Binding Antibody to Spike	29386	(10)
				PsV Neutralization 50% Titer	89	(43)
				PsV Neutralization 80% Titer	252	(15)
				Binding Antibody to RBD	763268	(19)
				Binding Antibody to Spike	2481988	(11)
				PsV Neutralization 50% Titer	1106	(32)
				PsV Neutralization 80% Titer	2409	(74)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
<b>Race</b>						
Not reported and unknown	Negative	Day 1	98	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17 17 24 22	(17, 17) (17, 17) (24, 24) (22, 22)
		Day 29	98	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	585 878 53 73	(367, 933) (496, 1554) (41, 69) (57, 93)
		Day 57	98	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	4062 5229 230 283	(2011, 8207) (2524, 10833) (149, 353) (162, 495)
Positive	Day 1	48		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17 17 24 22	(17, 17) (17, 17) (24, 24) (22, 22)
		Day 29	48	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	24907 48753 133 286	(11413, 5430) (19822, 11993) (55, 325) (138, 592)
		Day 57	48	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1323263 2024829 2991 3100	(505712, 34083) (764415, 53083) (991, 9024) (980, 9806)
American Indian or Alaska Native	Negative	Day 1	27	Binding Antibody to RBD	17	(17, 17)
		Day 29	27	Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17 24 22	(17, 17) (24, 24) (22, 22)
		Day 57	27	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	492 841 56 58	(281, 862) (497, 1424) (37, 83) (35, 99)
	Positive	Day 1	17	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer	3701 5302 273	(2089, 6558) (2655, 10583) (208, 359)
				PsV Neutralization 80% Titer	247	(219, 280)
				Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer	17 17 24	(17, 17) (17, 17) (24, 24)

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Asian	Negative	Day 29	17	PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	53664	(28)
				Binding Antibody to Spike	70861	(39)
		Day 57	17	PsV Neutralization 50% Titer	115	(83)
				PsV Neutralization 80% Titer	213	(10)
				Binding Antibody to RBD	1414716	(66)
	Positive	Day 1	84	Binding Antibody to Spike	5725330	(31)
				PsV Neutralization 50% Titer	2916	(10)
				PsV Neutralization 80% Titer	5444	(24)
		Day 29	84	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
Black or African American	Negative	Day 1	46	PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	1130	(74)
				Binding Antibody to Spike	1571	(10)
		Day 57	84	PsV Neutralization 50% Titer	63	(58)
				PsV Neutralization 80% Titer	92	(85)
				Binding Antibody to RBD	7837	(41)
	Positive	Day 1	216	Binding Antibody to Spike	16133	(62)
				PsV Neutralization 50% Titer	407	(27)
				PsV Neutralization 80% Titer	373	(27)
		Day 29	46	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
	Black or African American	Day 1	216	PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	11619	(19)
				Binding Antibody to Spike	36569	(11)
		Day 57	46	PsV Neutralization 50% Titer	87	(23)
				PsV Neutralization 80% Titer	149	(50)
				Binding Antibody to RBD	521481	(99)
White	Negative	Day 1	216	Binding Antibody to Spike	1751893	(65)
				PsV Neutralization 50% Titer	1291	(24)
				PsV Neutralization 80% Titer	2189	(44)
		Day 29	216	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	25	(24)
	Positive	Day 1	46	PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	678	(42)
				Binding Antibody to Spike	907	(56)
		Day 29	216	PsV Neutralization 50% Titer	56	(44)
				PsV Neutralization 80% Titer	66	(50)
				Binding Antibody to RBD	4901	(31)

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Positive	Day 1	91	Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	7128	(4607, 1102)	
				209	(121, 361)	
				242	(172, 341)	
				17	(17, 17)	
	Day 29	91	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17	(17, 17)	
				24	(24, 24)	
				22	(22, 22)	
				22121	(12760, 3834)	
	Day 57	91	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	27258	(15935, 4663)	
				107	(71, 162)	
				229	(147, 355)	
				946101	(483662, 1834)	
Multiracial	Negative	Day 1	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1414303	(716855, 2794)	
				1608	(912, 2834)	
				3218	(2241, 4620)	
				17	(17, 17)	
	Day 29	62	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17	(17, 17)	
				24	(24, 24)	
				22	(22, 22)	
				220	(54, 890)	
	Day 57	62	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	293	(70, 1232)	
				39	(21, 71)	
				53	(33, 85)	
				939	(160, 5531)	
Native Hawaiian or Other Pacific Islander	Positive	Day 1	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1329	(218, 8095)	
				113	(47, 273)	
				100	(34, 292)	
				17	(17, 17)	
	Day 29	28	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	17	(17, 17)	
				24	(24, 24)	
				22	(22, 22)	
				37199	(22732, 6084)	
	Day 57	28	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	47412	(33185, 6773)	
				150	(122, 184)	
				327	(220, 486)	
				2284913	(1619956, 3294)	
Native Hawaiian or Other Pacific Islander	Negative	Day 1	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	2984414	(2020851, 4494)	
				1828	(714, 4684)	
Native Hawaiian or Other Pacific Islander	Negative	Day 1	Binding Antibody to RBD Binding Antibody to Spike	8232	(5671, 11950)	
				17	(17, 17)	
Native Hawaiian or Other Pacific Islander	Negative	Day 1	Binding Antibody to Spike	17	(17, 17)	

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
White	Day 29	20	PsV Neutralization 50% Titer	24	(24)	
				22	(22)	
			Binding Antibody to RBD	2795	(128)	
			Binding Antibody to Spike	3885	(11)	
			PsV Neutralization 50% Titer	79	(48)	
	Day 57	20	PsV Neutralization 80% Titer	179	(28)	
			Binding Antibody to RBD	26587	(25)	
			Binding Antibody to Spike	51884	(19)	
			PsV Neutralization 50% Titer	504	(56)	
			PsV Neutralization 80% Titer	943	(82)	
Black	Positive	Day 1	Binding Antibody to RBD	17	(17)	
				17	(17)	
			PsV Neutralization 50% Titer	24	(24)	
			PsV Neutralization 80% Titer	22	(22)	
			Binding Antibody to RBD	33785	(16)	
	Day 29	7	Binding Antibody to Spike	67752	(19)	
			PsV Neutralization 50% Titer	99	(46)	
			PsV Neutralization 80% Titer	391	(21)	
			Binding Antibody to RBD	1775012	(39)	
			Binding Antibody to Spike	2028355	(38)	
Other	Negative	Day 1	PsV Neutralization 50% Titer	798	(36)	
				24331	(80)	
			Binding Antibody to RBD	17	(17)	
			Binding Antibody to Spike	17	(17)	
			PsV Neutralization 80% Titer	22	(22)	
	Day 29	28	Binding Antibody to RBD	6301	(10)	
			Binding Antibody to Spike	8355	(12)	
			PsV Neutralization 50% Titer	103	(89)	
			PsV Neutralization 80% Titer	102	(50)	
			Binding Antibody to RBD	105462	(85)	
Asian	Day 57	28	Binding Antibody to Spike	221629	(83)	
			PsV Neutralization 50% Titer	860	(48)	
			PsV Neutralization 80% Titer	624	(44)	
			Binding Antibody to RBD	17	(17)	
			Binding Antibody to Spike	17	(17)	
	Positive	Day 1	PsV Neutralization 50% Titer	24	(24)	
			PsV Neutralization 80% Titer	22	(22)	
			Binding Antibody to RBD	17228	(10)	
			Binding Antibody to Spike	43917	(38)	
			PsV Neutralization 50% Titer	101	(50)	

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
White	Negative	Day 57	24	Binding Antibody to RBD	794994	(549369, 115311)
				Binding Antibody to Spike	2203051	(1830631, 260831)
				PsV Neutralization 50% Titer	1881	(883, 4006)
			43	PsV Neutralization 80% Titer	2713	(1110, 6631)
		Day 1	17	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
	Positive	Day 29	43	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
			43	Binding Antibody to RBD	464	(165, 1307)
		Day 57	43	Binding Antibody to Spike	684	(225, 2083)
				PsV Neutralization 50% Titer	62	(55, 71)
			43	PsV Neutralization 80% Titer	77	(56, 106)
White Non-Hispanic	Negative	Day 1	38	Binding Antibody to RBD	3252	(571, 18539)
				Binding Antibody to Spike	5596	(971, 32243)
				PsV Neutralization 50% Titer	154	(69, 343)
		Day 29	38	PsV Neutralization 80% Titer	174	(68, 450)
				Binding Antibody to RBD	17	(17, 17)
			38	Binding Antibody to Spike	17	(17, 17)
	Positive	Day 57	38	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
			38	Binding Antibody to RBD	21515	(7856, 58924)
		Day 1	456	Binding Antibody to Spike	32724	(10987, 9740)
				PsV Neutralization 50% Titer	113	(62, 205)
			456	PsV Neutralization 80% Titer	280	(168, 464)
	Positive	Day 29	38	Binding Antibody to RBD	899840	(269899, 300000)
				Binding Antibody to Spike	2849885	(1213108, 600000)
				PsV Neutralization 50% Titer	1185	(283, 4957)
		Day 57	38	PsV Neutralization 80% Titer	2817	(742, 10699)
				Binding Antibody to RBD	17	(17, 17)
			456	Binding Antibody to Spike	17	(17, 17)
		Day 1	456	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
			Day 29	Binding Antibody to RBD	820	(555, 1213)
				Binding Antibody to Spike	1102	(742, 1637)
				PsV Neutralization 50% Titer	58	(43, 77)
		Day 57	456	PsV Neutralization 80% Titer	72	(57, 92)
				Binding Antibody to RBD	5778	(3698, 9029)
			Day 1	Binding Antibody to Spike	8551	(5369, 1362)
				PsV Neutralization 50% Titer	230	(164, 322)
				PsV Neutralization 80% Titer	297	(220, 402)
	Positive	Day 1	224	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)

Table 2.19: Table 3h. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Day 29 224	Day 29	224	PsV Neutralization 50% Titer	24	(24)	
				22	(22)	
			Binding Antibody to RBD	21377	(100)	
			Binding Antibody to Spike	39697	(199)	
			PsV Neutralization 50% Titer	114	(66)	
	Day 57	224	PsV Neutralization 80% Titer	237	(173)	
			Binding Antibody to RBD	1196300	(633)	
			Binding Antibody to Spike	2008434	(950)	
			PsV Neutralization 50% Titer	1605	(722)	
			PsV Neutralization 80% Titer	4347	(333)	

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.20: Table 3i. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race and ethnic group

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Race and ethnic group						
White Non-Hispanic	Negative	Day 1	456	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	456	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Positive	Day 1	456	Binding Antibody to RBD	820	(555, 1213)
				Binding Antibody to Spike	1102	(742, 1637)
		Day 29	456	PsV Neutralization 50% Titer	58	(43, 77)
				PsV Neutralization 80% Titer	72	(57, 92)
	Positive	Day 1	456	Binding Antibody to RBD	5778	(3698, 9029)
				Binding Antibody to Spike	8551	(5369, 1362)
		Day 29	456	PsV Neutralization 50% Titer	230	(164, 322)
				PsV Neutralization 80% Titer	297	(220, 402)
Communities of Color	Negative	Day 1	224	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
		Day 29	224	PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
	Positive	Day 1	224	Binding Antibody to RBD	21377	(10629, 4299)
				Binding Antibody to Spike	39697	(19683, 8000)
		Day 29	224	PsV Neutralization 50% Titer	114	(66, 196)
				PsV Neutralization 80% Titer	237	(172, 328)
	Positive	Day 1	224	Binding Antibody to RBD	1196300	(639742, 2299)
				Binding Antibody to Spike	2008434	(956643, 4299)
		Day 29	224	PsV Neutralization 50% Titer	1605	(723, 3563)
				PsV Neutralization 80% Titer	4347	(3347, 5646)

Table 2.20: Table 3i. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
		Day 29	261	Binding Antibody to RBD	22232	(11)
				Binding Antibody to Spike	38731	(21)
				PsV Neutralization 50% Titer	111	(61)
				PsV Neutralization 80% Titer	218	(12)
		Day 57	261	Binding Antibody to RBD	1018509	(47)
				Binding Antibody to Spike	1986558	(10)
				PsV Neutralization 50% Titer	1816	(72)
				PsV Neutralization 80% Titer	3532	(17)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.21: Table 3j. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Race and ethnic group

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Age, Race and ethnic group						
Age $\geq$ 65 Communities of Color						
	Negative	Day 1	253	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(22, 22)
		Day 29	253	Binding Antibody to RBD	563	(536, 591)
				Binding Antibody to Spike	794	(793, 794)
				PsV Neutralization 50% Titer	49	(49, 49)
				PsV Neutralization 80% Titer	64	(60, 68)
		Day 57	253	Binding Antibody to RBD	3882	(3848, 3917)
				Binding Antibody to Spike	6096	(6064, 6128)
				PsV Neutralization 50% Titer	201	(194, 209)
				PsV Neutralization 80% Titer	223	(208, 239)
	Positive	Day 1	148	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	25	(24, 25)
				PsV Neutralization 80% Titer	22	(22, 22)
		Day 29	148	Binding Antibody to RBD	16900	(14512, 1968)
				Binding Antibody to Spike	30307	(28649, 3200)
				PsV Neutralization 50% Titer	88	(85, 91)
				PsV Neutralization 80% Titer	174	(172, 177)
		Day 57	148	Binding Antibody to RBD	759339	(737392, 786)
				Binding Antibody to Spike	1536749	(1478612, 1593)
				PsV Neutralization 50% Titer	1263	(1256, 1269)
				PsV Neutralization 80% Titer	2676	(2533, 2827)
Age $\geq$ 65 White Non-Hispanic	Negative	Day 1	227	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	21	(21, 22)
		Day 29	227	Binding Antibody to RBD	720	(468, 1109)
				Binding Antibody to Spike	961	(632, 1460)
				PsV Neutralization 50% Titer	51	(45, 58)
				PsV Neutralization 80% Titer	66	(55, 78)
		Day 57	227	Binding Antibody to RBD	5027	(3007, 8404)
				Binding Antibody to Spike	7516	(4267, 13238)
				PsV Neutralization 50% Titer	200	(157, 256)
				PsV Neutralization 80% Titer	269	(193, 374)
	Positive	Day 1	117	Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)

Table 2.21: Table 3j. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95%
Age $\geq$ 65 Communities of Color	Negative	Day 29	117	PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	16418	(13)
				Binding Antibody to Spike	30286	(25)
				PsV Neutralization 50% Titer	94	(73)
				PsV Neutralization 80% Titer	209	(20)
	Positive	Day 57	117	Binding Antibody to RBD	929328	(88)
				Binding Antibody to Spike	1510748	(12)
				PsV Neutralization 50% Titer	1165	(10)
				PsV Neutralization 80% Titer	3881	(35)
				Binding Antibody to RBD	17	(17)
Age $\geq$ 65 White Non-Hispanic	Negative	Day 1	282	Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	1136	(11)
				Binding Antibody to Spike	1507	(15)
	Positive	Day 29	282	PsV Neutralization 50% Titer	81	(81)
				PsV Neutralization 80% Titer	102	(10)
				Binding Antibody to RBD	7509	(75)
				Binding Antibody to Spike	10117	(10)
				PsV Neutralization 50% Titer	378	(37)
				PsV Neutralization 80% Titer	364	(36)
	Negative	Day 1	113	Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
				Binding Antibody to RBD	77378	(77)
	Positive	Day 29	113	Binding Antibody to Spike	118160	(11)
				PsV Neutralization 50% Titer	318	(31)
				PsV Neutralization 80% Titer	607	(60)
				Binding Antibody to RBD	3872288	(38)
				Binding Antibody to Spike	6385528	(63)
	Positive	Day 57	113	PsV Neutralization 50% Titer	9473	(94)
				PsV Neutralization 80% Titer	12476	(12)
				Binding Antibody to RBD	17	(17)
				Binding Antibody to Spike	17	(17)
				PsV Neutralization 50% Titer	24	(24)
				PsV Neutralization 80% Titer	22	(22)
	Negative	Day 29	229	Binding Antibody to RBD	1373	(13)
				Binding Antibody to Spike	1899	(18)
				PsV Neutralization 50% Titer	94	(94)

Table 2.21: Table 3j. Geometric mean titers (GMTs) or geometric mean value of concentrations (GMCs) by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GMT/GMC	95% CI
Positive	Day 57	229		PsV Neutralization 80% Titer	106	(106, 106)
				Binding Antibody to RBD	10032	(10032, 10032)
				Binding Antibody to Spike	14259	(14259, 14259)
				PsV Neutralization 50% Titer	397	(397, 397)
				PsV Neutralization 80% Titer	443	(443, 443)
	Day 1	107		Binding Antibody to RBD	17	(17, 17)
				Binding Antibody to Spike	17	(17, 17)
				PsV Neutralization 50% Titer	24	(24, 24)
				PsV Neutralization 80% Titer	22	(21, 22)
	Day 29	107		Binding Antibody to RBD	55615	(55615, 55615)
				Binding Antibody to Spike	105802	(105802, 105802)
				PsV Neutralization 50% Titer	221	(221, 221)
				PsV Neutralization 80% Titer	379	(379, 379)
	Day 57	107		Binding Antibody to RBD	2986544	(2986544, 2986544)
				Binding Antibody to Spike	5634914	(5634914, 5634914)
				PsV Neutralization 50% Titer	5121	(5121, 5121)
				PsV Neutralization 80% Titer	6556	(6556, 6556)

bAb LLOQ = 34; nAb ID50 LLOQ = 49; nAb ID80 LLOQ = 43

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strat

## 2.0.4 Table 4. GMTRs or GMCRs between post-vaccinations vs. pre-vaccination

Table 2.22: Table 4a. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by All participants

Group	Baseline	Visit	N	Endpoint	G
All participants					
All participants					
Negative	D29 fold-rise over D1	1062	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	55 74 24 35	
D57 fold-rise over D1	1062	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	39 59 10 12		
D57 fold-rise over D29	1062	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22 24 10 9.		
Positive	D29 fold-rise over D1	543	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22 36 95 21	
D57 fold-rise over D1	543	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	12 22 16 36		
D57 fold-rise over D29	543	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	56 60 22 21		

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample size.

Table 2.23: Table 4b. Geometric mean titer ratios (GMTRs) or geometric mean concentrations ratios (GMCRs) between post-vaccinations/pre-vaccination by Age

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Age					
Age $j \leq 65$					
	Negative	D29 fold-rise over D1	513	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	489.15 653.42 21.72 32.82
		D57 fold-rise over D1	513	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3487.32 5191.97 93.11 117.31
		D57 fold-rise over D29	513	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	21.94 24.05 10.82 9.53
	Positive	D29 fold-rise over D1	294	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	16816.68 27355.47 73.25 179.36
		D57 fold-rise over D1	294	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	890756.73 1614779.22 1106.10 2879.09
		D57 fold-rise over D29	294	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	53.78 56.59 20.05 20.99
Age $j = 65$					
	Negative	D29 fold-rise over D1	549	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	881.82 1168.32 36.61 47.02
		D57 fold-rise over D1	549	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	6435.64 9449.75 168.66 183.62
		D57 fold-rise over D29	549	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	23.54 25.54 11.17 9.80
	Positive	D29 fold-rise over D1	249	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	66946.13 114866.92 282.42 487.89

Table 2.23: Table 4b. Geometric mean titer ratios (GMTRs) or geometric mean count ratios (GMCRs) between post-vaccinations/pre-vaccination by Age (continued)

Group	Baseline	Visit	N	Endpoint	GM
	D57 fold-rise over D1	249	Binding Antibody to RBD	452	
			Binding Antibody to Spike	892	
			PsV Neutralization 50% Titer	770	
			PsV Neutralization 80% Titer	940	
	D57 fold-rise over D29	249	Binding Antibody to RBD	68.	
			Binding Antibody to Spike	76.	
			PsV Neutralization 50% Titer	33.	
			PsV Neutralization 80% Titer	23.	

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.24: Table 4c. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
<b>Risk for Severe Covid-19</b>					
At-risk	Negative	D29 fold-rise over D1	541	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	609.41 816.88 23.96 35.20
		D57 fold-rise over D1	541	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	4432.39 6518.38 107.58 141.00
		D57 fold-rise over D29	541	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.86 23.95 10.67 10.45
	Positive	D29 fold-rise over D1	246	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	26205.91 42092.31 113.33 243.81
		D57 fold-rise over D1	246	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1650844.79 2628330.98 1986.45 4134.61
		D57 fold-rise over D29	246	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	63.68 60.95 25.09 21.63
Not at-risk	Negative	D29 fold-rise over D1	521	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	536.79 714.39 24.45 35.57
		D57 fold-rise over D1	521	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3825.04 5697.47 105.24 125.12
		D57 fold-rise over D29	521	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.07 24.52 10.98 9.29
	Positive	D29 fold-rise over D1	297	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	20931.32 34662.99 90.63 211.13

Table 2.24: Table 4c. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCs) between post-vaccinations/pre-vaccination by Risk for Severe Covid-19 (cont.)

Group	Baseline	Visit	N	Endpoint	GM
	D57 fold-rise over D1		297	Binding Antibody to RBD	111
				Binding Antibody to Spike	215
				PsV Neutralization 50% Titer	152
				PsV Neutralization 80% Titer	349
	D57 fold-rise over D29		297	Binding Antibody to RBD	54.
				Binding Antibody to Spike	59.
				PsV Neutralization 50% Titer	21.
				PsV Neutralization 80% Titer	21.

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.25: Table 4d. Geometric mean titer ratios (GMTRs) or geometric mean concentrations ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Age, Risk for Severe Covid-19					
Age $\geq$ 65 At-risk	Negative	D29 fold-rise over D1	257	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	451.38 601.13 18.48 28.94
		D57 fold-rise over D1	257	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3224.20 4687.58 81.00 108.97
		D57 fold-rise over D29	257	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.59 23.29 10.46 10.25
	Positive	D29 fold-rise over D1	148	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	16491.48 27081.18 78.36 177.67
		D57 fold-rise over D1	148	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	924707.07 1549249.24 1074.78 2904.02
		D57 fold-rise over D29	148	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	56.36 55.59 21.02 20.78
Age $\geq$ 65 Not at-risk	Negative	D29 fold-rise over D1	256	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	499.82 668.22 22.68 33.95
		D57 fold-rise over D1	256	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3561.57 5336.44 96.66 119.66
		D57 fold-rise over D29	256	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	21.77 24.26 10.92 9.35
	Positive	D29 fold-rise over D1	146	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	16900.44 27425.71 72.01 179.80

Table 2.25: Table 4d. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCRs) between post-vaccinations/pre-vaccination by Age, Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	GM
		D57 fold-rise over D1	146	Binding Antibody to RBD	882
				Binding Antibody to Spike	163
				PsV Neutralization 50% Titer	111
				PsV Neutralization 80% Titer	287
		D57 fold-rise over D29	146	Binding Antibody to RBD	53.
				Binding Antibody to Spike	56.
				PsV Neutralization 50% Titer	19.
				PsV Neutralization 80% Titer	21.
Age $i = 65$ At-risk	Negative	D29 fold-rise over D1	284	Binding Antibody to RBD	976
				Binding Antibody to Spike	132
				PsV Neutralization 50% Titer	36.
				PsV Neutralization 80% Titer	47.
		D57 fold-rise over D1	284	Binding Antibody to RBD	731
				Binding Antibody to Spike	109
				PsV Neutralization 50% Titer	168
				PsV Neutralization 80% Titer	211
		D57 fold-rise over D29	284	Binding Antibody to RBD	23.
				Binding Antibody to Spike	25.
				PsV Neutralization 50% Titer	11.
				PsV Neutralization 80% Titer	10.
	Positive	D29 fold-rise over D1	98	Binding Antibody to RBD	691
				Binding Antibody to Spike	100
				PsV Neutralization 50% Titer	245
				PsV Neutralization 80% Titer	473
		D57 fold-rise over D1	98	Binding Antibody to RBD	556
				Binding Antibody to Spike	795
				PsV Neutralization 50% Titer	719
				PsV Neutralization 80% Titer	867
		D57 fold-rise over D29	98	Binding Antibody to RBD	82.
				Binding Antibody to Spike	73.
				PsV Neutralization 50% Titer	36.
				PsV Neutralization 80% Titer	23.
Age $i = 65$ Not at-risk	Negative	D29 fold-rise over D1	265	Binding Antibody to RBD	799
				Binding Antibody to Spike	103
				PsV Neutralization 50% Titer	37.
				PsV Neutralization 80% Titer	46.
		D57 fold-rise over D1	265	Binding Antibody to RBD	569
				Binding Antibody to Spike	821
				PsV Neutralization 50% Titer	169
				PsV Neutralization 80% Titer	160
		D57 fold-rise over D29	265	Binding Antibody to RBD	23.
				Binding Antibody to Spike	26.

Table 2.25: Table 4d. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Risk for Severe Covid-19 (continu)

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Positive	D29 fold-rise over D1	151	PsV Neutralization 50% Titer	11.33	
			PsV Neutralization 80% Titer	8.95	
			Binding Antibody to RBD	65536.14	
			Binding Antibody to Spike	120936.03	
			PsV Neutralization 50% Titer	309.15	
			PsV Neutralization 80% Titer	497.58	
	D57 fold-rise over D1	151	Binding Antibody to RBD	3951583.83	
			Binding Antibody to Spike	9609727.65	
			PsV Neutralization 50% Titer	8049.02	
			PsV Neutralization 80% Titer	9917.30	
	D57 fold-rise over D29	151	Binding Antibody to RBD	61.08	
			Binding Antibody to Spike	78.59	
			PsV Neutralization 50% Titer	31.68	
			PsV Neutralization 80% Titer	24.27	

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.26: Table 4e. Geometric mean titer ratios (GMTRs) or geometric mean co-ratios (GMCRs) between post-vaccinations/pre-vaccination by Sex

Group		Baseline	Visit	N	Endpoint	GM
Sex						
Female						
	Negative	D29 fold-rise over D1		597	Binding Antibody to RBD	542
					Binding Antibody to Spike	790
					PsV Neutralization 50% Titer	25.
					PsV Neutralization 80% Titer	35.
		D57 fold-rise over D1		597	Binding Antibody to RBD	422
					Binding Antibody to Spike	633
					PsV Neutralization 50% Titer	107
					PsV Neutralization 80% Titer	137
		D57 fold-rise over D29		597	Binding Antibody to RBD	23.
					Binding Antibody to Spike	24.
					PsV Neutralization 50% Titer	10.
					PsV Neutralization 80% Titer	9.9
	Positive	D29 fold-rise over D1		298	Binding Antibody to RBD	220
					Binding Antibody to Spike	320
					PsV Neutralization 50% Titer	93.
					PsV Neutralization 80% Titer	213
		D57 fold-rise over D1		298	Binding Antibody to RBD	125
					Binding Antibody to Spike	217
					PsV Neutralization 50% Titer	154
					PsV Neutralization 80% Titer	341
		D57 fold-rise over D29		298	Binding Antibody to RBD	58.
					Binding Antibody to Spike	64.
					PsV Neutralization 50% Titer	22.
					PsV Neutralization 80% Titer	20.
Male						
	Negative	D29 fold-rise over D1		465	Binding Antibody to RBD	572
					Binding Antibody to Spike	675
					PsV Neutralization 50% Titer	23.
					PsV Neutralization 80% Titer	35.
		D57 fold-rise over D1		465	Binding Antibody to RBD	369
					Binding Antibody to Spike	540
					PsV Neutralization 50% Titer	104
					PsV Neutralization 80% Titer	119
		D57 fold-rise over D29		465	Binding Antibody to RBD	20.
					Binding Antibody to Spike	24.
					PsV Neutralization 50% Titer	11.
					PsV Neutralization 80% Titer	9.1
	Positive	D29 fold-rise over D1		245	Binding Antibody to RBD	221
					Binding Antibody to Spike	428
					PsV Neutralization 50% Titer	98.
					PsV Neutralization 80% Titer	225

Table 2.26: Table 4e. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Sex (continued)

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
	D57 fold-rise over D1		245	Binding Antibody to RBD	1190973.05
				Binding Antibody to Spike	2392593.05
				PsV Neutralization 50% Titer	1731.20
				PsV Neutralization 80% Titer	3951.26
	D57 fold-rise over D29		245	Binding Antibody to RBD	53.96
				Binding Antibody to Spike	54.33
				PsV Neutralization 50% Titer	21.79
				PsV Neutralization 80% Titer	23.49

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.27: Table 4f. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCRs) between post-vaccinations/pre-vaccination by Age, sex

Group	Baseline	Visit	N	Endpoint	GM
Age, sex					
Age ≥ 65 Female					
	Negative	D29 fold-rise over D1	291	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	446 662 22. 32.
		D57 fold-rise over D1	291	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	343 508 89. 120
		D57 fold-rise over D29	291	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	23. 23. 10. 9.8
	Positive	D29 fold-rise over D1	166	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	171 246 74. 183
		D57 fold-rise over D1	166	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	943 158 104 267
		D57 fold-rise over D29	166	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	56. 61. 19. 18.
Age < 65 Male					
	Negative	D29 fold-rise over D1	222	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	550 641 21. 33.
		D57 fold-rise over D1	222	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	355 533 98. 112
		D57 fold-rise over D29	222	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	20. 24. 11. 9.2
	Positive	D29 fold-rise over D1	128	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	163 315 71. 174

Table 2.27: Table 4f. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Age $i = 65$ Female	Negative	D57 fold-rise over D1	128	Binding Antibody to RBD	823023.51
				Binding Antibody to Spike	1656343.31
				PsV Neutralization 50% Titer	1196.91
				PsV Neutralization 80% Titer	3184.76
	Positive	D57 fold-rise over D29	128	Binding Antibody to RBD	50.39
				Binding Antibody to Spike	50.69
				PsV Neutralization 50% Titer	20.66
				PsV Neutralization 80% Titer	24.12
	D29 fold-rise over D1		306	Binding Antibody to RBD	1153.43
				Binding Antibody to Spike	1631.88
				PsV Neutralization 50% Titer	41.90
				PsV Neutralization 80% Titer	52.79
	D29 fold-rise over D1	D57 fold-rise over D1	306	Binding Antibody to RBD	9395.49
				Binding Antibody to Spike	14906.94
				PsV Neutralization 50% Titer	216.59
				PsV Neutralization 80% Titer	229.98
	D29 fold-rise over D29	D57 fold-rise over D29	306	Binding Antibody to RBD	25.18
				Binding Antibody to Spike	26.46
				PsV Neutralization 50% Titer	12.04
				PsV Neutralization 80% Titer	10.54
	Positive	D29 fold-rise over D1	132	Binding Antibody to RBD	65617.70
				Binding Antibody to Spike	102214.88
				PsV Neutralization 50% Titer	258.26
				PsV Neutralization 80% Titer	417.22
	D29 fold-rise over D1	D57 fold-rise over D1	132	Binding Antibody to RBD	4439677.78
				Binding Antibody to Spike	8680593.01
				PsV Neutralization 50% Titer	8713.68
				PsV Neutralization 80% Titer	10066.53
	D29 fold-rise over D29	D57 fold-rise over D29	132	Binding Antibody to RBD	68.09
				Binding Antibody to Spike	83.10
				PsV Neutralization 50% Titer	40.98
				PsV Neutralization 80% Titer	26.57
Age $i = 65$ Male	Negative	D29 fold-rise over D1	243	Binding Antibody to RBD	652.29
				Binding Antibody to Spike	802.79
				PsV Neutralization 50% Titer	31.46
	D29 fold-rise over D1	D57 fold-rise over D1	243	Binding Antibody to RBD	4207.95
				Binding Antibody to Spike	5664.02
				PsV Neutralization 50% Titer	127.35
	D29 fold-rise over D29	D57 fold-rise over D29	243	Binding Antibody to RBD	142.60
				Binding Antibody to Spike	21.83
					24.55

Table 2.27: Table 4f. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCRs) between post-vaccinations/pre-vaccination by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	GM
				PsV Neutralization 50% Titer	10.
				PsV Neutralization 80% Titer	9.0
Positive	D29 fold-rise over D1		117	Binding Antibody to RBD	684
				Binding Antibody to Spike	131
				PsV Neutralization 50% Titer	312
				PsV Neutralization 80% Titer	583
	D57 fold-rise over D1		117	Binding Antibody to RBD	461
				Binding Antibody to Spike	920
				PsV Neutralization 50% Titer	669
				PsV Neutralization 80% Titer	870
	D57 fold-rise over D29		117	Binding Antibody to RBD	69.
				Binding Antibody to Spike	70.
				PsV Neutralization 50% Titer	26.
				PsV Neutralization 80% Titer	21.

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample size.

Table 2.28: Table 4g. Geometric mean titer ratios (GMTRs) or geometric mean concentrations ratios (GMCRs) between post-vaccinations/pre-vaccination by Hispanic or Latino ethnicity

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Hispanic or Latino ethnicity					
Hispanic or Latino					
Negative	D29 fold-rise over D1	125	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	352.86 509.78 18.37 25.04	
D57 fold-rise over D1	125	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	2020.32 3202.02 79.45 70.70		
D57 fold-rise over D29	125	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	19.39 22.00 11.51 8.29		
Positive	D29 fold-rise over D1	77	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	29174.13 31003.47 102.24 186.60	
D57 fold-rise over D1	77	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1880589.79 2085701.16 1965.39 3050.81		
D57 fold-rise over D29	77	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	62.19 64.94 22.23 22.58		
Not Hispanic or Latino					
Negative	D29 fold-rise over D1	844	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	667.83 876.97 26.46 39.31	
D57 fold-rise over D1	844	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	5172.82 7417.66 121.19 156.84		
D57 fold-rise over D29	844	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	23.09 24.62 11.09 10.08		
Positive	D29 fold-rise over D1	406	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	21022.34 37716.26 95.46 222.23	

Table 2.28: Table 4g. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCRs) between post-vaccinations/pre-vaccination by Hispanic or Latino ethnicity

Group	Baseline	Visit	N	Endpoint	GM
		D57 fold-rise over D1	406	Binding Antibody to RBD	117
				Binding Antibody to Spike	217
				PsV Neutralization 50% Titer	161
				PsV Neutralization 80% Titer	404
		D57 fold-rise over D29	406	Binding Antibody to RBD	56.
				Binding Antibody to Spike	55.
				PsV Neutralization 50% Titer	21.
				PsV Neutralization 80% Titer	22.
Not reported and unknown	Negative	D29 fold-rise over D1	93	Binding Antibody to RBD	228
				Binding Antibody to Spike	313
				PsV Neutralization 50% Titer	17.
				PsV Neutralization 80% Titer	23.
		D57 fold-rise over D1	93	Binding Antibody to RBD	116
				Binding Antibody to Spike	208
				PsV Neutralization 50% Titer	52.
				PsV Neutralization 80% Titer	57.
		D57 fold-rise over D29	93	Binding Antibody to RBD	19.
				Binding Antibody to Spike	25.
				PsV Neutralization 50% Titer	9.0
				PsV Neutralization 80% Titer	7.6
Positive		D29 fold-rise over D1	60	Binding Antibody to RBD	201
				Binding Antibody to Spike	358
				PsV Neutralization 50% Titer	87.
				PsV Neutralization 80% Titer	249
		D57 fold-rise over D1	60	Binding Antibody to RBD	861
				Binding Antibody to Spike	343
				PsV Neutralization 50% Titer	125
				PsV Neutralization 80% Titer	231
		D57 fold-rise over D29	60	Binding Antibody to RBD	45.
				Binding Antibody to Spike	94.
				PsV Neutralization 50% Titer	24.
				PsV Neutralization 80% Titer	15.

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample size.

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race

Group		Baseline	Visit	N	Endpoint	GMTR/GMCR
Race						
Not reported and unknown	Negative	D29 fold-rise over D1	98		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	421.00 613.97 20.05 36.46
		D57 fold-rise over D1	98		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3012.94 3788.43 96.94 127.96
		D57 fold-rise over D29	98		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.86 19.90 12.06 10.42
Positive	D29 fold-rise over D1	48			Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	27507.44 41982.38 115.25 262.75
	D57 fold-rise over D1	48			Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1644385.58 2148611.41 3182.34 2980.20
	D57 fold-rise over D29	48			Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	56.59 51.93 27.13 18.66
American Indian or Alaska Native	Negative	D29 fold-rise over D1	27		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	386.89 713.05 22.72 29.97
		D57 fold-rise over D1	27		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3014.32 4981.13 122.32 132.15
		D57 fold-rise over D29	27		Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	25.44 20.82 13.03 10.69
Positive	D29 fold-rise over D1	17			Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer	21904.15 41435.07 90.91

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean ratios (GMCRs) between post-vaccinations/pre-vaccination by Race (continued)

Group	Baseline	Visit	N	Endpoint	GM
Asian	Negative	D57 fold-rise over D1	17	PsV Neutralization 80% Titer	182
				Binding Antibody to RBD	589
				Binding Antibody to Spike	360
				PsV Neutralization 50% Titer	224
	Positive	D57 fold-rise over D29	17	PsV Neutralization 80% Titer	447
				Binding Antibody to RBD	29.
				Binding Antibody to Spike	88.
				PsV Neutralization 50% Titer	27.
		D29 fold-rise over D1	84	PsV Neutralization 80% Titer	21.
				Binding Antibody to RBD	861
		D57 fold-rise over D1	84	Binding Antibody to Spike	120
				PsV Neutralization 50% Titer	30.
				PsV Neutralization 80% Titer	50.
				Binding Antibody to RBD	609
Black or African American	Negative	D57 fold-rise over D29	84	Binding Antibody to Spike	130
				PsV Neutralization 50% Titer	201
				PsV Neutralization 80% Titer	210
		D29 fold-rise over D1	46	Binding Antibody to RBD	19.
				Binding Antibody to Spike	28.
	Positive	D57 fold-rise over D1	46	PsV Neutralization 50% Titer	16.
				PsV Neutralization 80% Titer	9.7
		D57 fold-rise over D29	46	Binding Antibody to RBD	140
				Binding Antibody to Spike	357
		D29 fold-rise over D1	46	PsV Neutralization 50% Titer	52.
				PsV Neutralization 80% Titer	167
	D57 fold-rise over D1	46	Binding Antibody to RBD	685	
				Binding Antibody to Spike	194
		D57 fold-rise over D29	46	PsV Neutralization 50% Titer	114
				PsV Neutralization 80% Titer	265
	D29 fold-rise over D1	46	Binding Antibody to RBD	49.	
				Binding Antibody to Spike	53.
		D57 fold-rise over D1	216	PsV Neutralization 50% Titer	23.
				PsV Neutralization 80% Titer	20.
	D57 fold-rise over D29	216	Binding Antibody to RBD	544	
				Binding Antibody to Spike	706
		216	PsV Neutralization 50% Titer	24.	
				PsV Neutralization 80% Titer	30.
	Binding Antibody to RBD	216	Binding Antibody to RBD	412	
				Binding Antibody to Spike	587
		216	PsV Neutralization 50% Titer	101	
				PsV Neutralization 80% Titer	115

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race (continued)

Group		Baseline	Visit	N	Endpoint	GMTR/GMCR
White	Positive	D29 fold-rise over D1	91	Binding Antibody to Spike	25.12	
				PsV Neutralization 50% Titer	10.60	
				PsV Neutralization 80% Titer	9.51	
	D57 fold-rise over D1	91	Binding Antibody to RBD	22493.30		
			Binding Antibody to Spike	29535.35		
			PsV Neutralization 50% Titer	81.14		
	D57 fold-rise over D29	91	PsV Neutralization 80% Titer	281.79		
			Binding Antibody to RBD	1131288.91		
			Binding Antibody to Spike	1683482.75		
Multiracial	Negative	D29 fold-rise over D1	62	PsV Neutralization 50% Titer	1372.25	
				PsV Neutralization 80% Titer	4096.94	
				Binding Antibody to RBD	48.41	
	D57 fold-rise over D1	62	Binding Antibody to Spike	52.28		
			PsV Neutralization 50% Titer	23.39		
			PsV Neutralization 80% Titer	17.99		
	D57 fold-rise over D29	62	Binding Antibody to RBD	157.76		
			Binding Antibody to Spike	212.67		
			PsV Neutralization 50% Titer	14.32		
Asian	Positive	D29 fold-rise over D1	28	PsV Neutralization 80% Titer	19.83	
				Binding Antibody to RBD	684.26	
				Binding Antibody to Spike	988.34	
	D57 fold-rise over D1	28	PsV Neutralization 50% Titer	41.69		
			PsV Neutralization 80% Titer	39.35		
			Binding Antibody to RBD	18.52		
	D57 fold-rise over D29	28	Binding Antibody to Spike	19.77		
			PsV Neutralization 50% Titer	9.80		
			PsV Neutralization 80% Titer	7.01		
Native Hawaiian or Other Pacific Islander	Negative	D29 fold-rise over D1	20	Binding Antibody to RBD	43692.65	
				Binding Antibody to Spike	34705.72	
				PsV Neutralization 50% Titer	142.97	
	D57 fold-rise over D1	28	PsV Neutralization 80% Titer	294.77		
			Binding Antibody to RBD	3321276.27		
			Binding Antibody to Spike	3028697.60		
	D57 fold-rise over D29	28	PsV Neutralization 50% Titer	1683.56		
			PsV Neutralization 80% Titer	6969.92		
			Binding Antibody to RBD	74.45		
	D29 fold-rise over D1	20	Binding Antibody to Spike	80.20		
			PsV Neutralization 50% Titer	19.06		
			PsV Neutralization 80% Titer	27.17		
	Binding Antibody to RBD	1944.56	Binding Antibody to Spike	2287.99		

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean ratios (GMCRs) between post-vaccinations/pre-vaccination by Race (continued)

Group	Baseline	Visit	N	Endpoint	GM
				PsV Neutralization 50% Titer	43.
				PsV Neutralization 80% Titer	79.
	D57 fold-rise over D1		20	Binding Antibody to RBD	193.
				Binding Antibody to Spike	351.
				PsV Neutralization 50% Titer	324.
				PsV Neutralization 80% Titer	425.
	D57 fold-rise over D29		20	Binding Antibody to RBD	23.
				Binding Antibody to Spike	33.
				PsV Neutralization 50% Titer	12.
				PsV Neutralization 80% Titer	12.
	Positive	D29 fold-rise over D1	7	Binding Antibody to RBD	478.
				Binding Antibody to Spike	532.
				PsV Neutralization 50% Titer	95.
				PsV Neutralization 80% Titer	249.
		D57 fold-rise over D1	7	Binding Antibody to RBD	253.
				Binding Antibody to Spike	190.
				PsV Neutralization 50% Titer	775.
				PsV Neutralization 80% Titer	155.
		D57 fold-rise over D29	7	Binding Antibody to RBD	51.
				Binding Antibody to Spike	28.
				PsV Neutralization 50% Titer	13.
				PsV Neutralization 80% Titer	59.
Other	Negative	D29 fold-rise over D1	28	Binding Antibody to RBD	562.
				Binding Antibody to Spike	762.
				PsV Neutralization 50% Titer	60.
				PsV Neutralization 80% Titer	55.
		D57 fold-rise over D1	28	Binding Antibody to RBD	995.
				Binding Antibody to Spike	232.
				PsV Neutralization 50% Titer	538.
				PsV Neutralization 80% Titer	305.
		D57 fold-rise over D29	28	Binding Antibody to RBD	30.
				Binding Antibody to Spike	47.
				PsV Neutralization 50% Titer	14.
				PsV Neutralization 80% Titer	11.
	Positive	D29 fold-rise over D1	24	Binding Antibody to RBD	288.
				Binding Antibody to Spike	315.
				PsV Neutralization 50% Titer	108.
				PsV Neutralization 80% Titer	98.
		D57 fold-rise over D1	24	Binding Antibody to RBD	137.
				Binding Antibody to Spike	202.
				PsV Neutralization 50% Titer	227.
				PsV Neutralization 80% Titer	178.

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race (continued)

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
White	Negative	D57 fold-rise over D29	24	Binding Antibody to RBD	46.49
				Binding Antibody to Spike	59.15
				PsV Neutralization 50% Titer	27.85
				PsV Neutralization 80% Titer	27.42
	Negative	D29 fold-rise over D1	43	Binding Antibody to RBD	295.10
				Binding Antibody to Spike	476.61
				PsV Neutralization 50% Titer	20.62
				PsV Neutralization 80% Titer	36.21
	Positive	D57 fold-rise over D1	43	Binding Antibody to RBD	2118.26
				Binding Antibody to Spike	4228.05
				PsV Neutralization 50% Titer	57.67
				PsV Neutralization 80% Titer	81.91
White Non-Hispanic	Negative	D57 fold-rise over D29	43	Binding Antibody to RBD	24.10
				Binding Antibody to Spike	30.04
				PsV Neutralization 50% Titer	8.44
				PsV Neutralization 80% Titer	6.82
	Positive	D29 fold-rise over D1	38	Binding Antibody to RBD	22744.80
				Binding Antibody to Spike	41650.95
				PsV Neutralization 50% Titer	127.07
				PsV Neutralization 80% Titer	268.34
	Positive	D57 fold-rise over D1	38	Binding Antibody to RBD	1032251.91
				Binding Antibody to Spike	4232833.71
				PsV Neutralization 50% Titer	1403.07
				PsV Neutralization 80% Titer	2613.51
	Positive	D57 fold-rise over D29	38	Binding Antibody to RBD	47.76
				Binding Antibody to Spike	98.94
				PsV Neutralization 50% Titer	21.70
				PsV Neutralization 80% Titer	17.41
White Non-Hispanic	Negative	D29 fold-rise over D1	456	Binding Antibody to RBD	662.84
				Binding Antibody to Spike	836.46
				PsV Neutralization 50% Titer	26.16
				PsV Neutralization 80% Titer	38.69
	Positive	D57 fold-rise over D1	456	Binding Antibody to RBD	4836.36
				Binding Antibody to Spike	6806.21
				PsV Neutralization 50% Titer	112.20
				PsV Neutralization 80% Titer	153.89
	Positive	D57 fold-rise over D29	456	Binding Antibody to RBD	22.31
				Binding Antibody to Spike	24.46
				PsV Neutralization 50% Titer	10.34
				PsV Neutralization 80% Titer	10.05
	Positive	D29 fold-rise over D1	224	Binding Antibody to RBD	18243.12
				Binding Antibody to Spike	36804.59

Table 2.29: Table 4h. Geometric mean titer ratios (GMTRs) or geometric mean ratios (GMCRs) between post-vaccinations/pre-vaccination by Race (continued)

Group	Baseline	Visit	N	Endpoint	GM
				PsV Neutralization 50% Titer	96.
				PsV Neutralization 80% Titer	201.
	D57 fold-rise over D1		224	Binding Antibody to RBD	111.
				Binding Antibody to Spike	211.
				PsV Neutralization 50% Titer	157.
				PsV Neutralization 80% Titer	384.
	D57 fold-rise over D29		224	Binding Antibody to RBD	66.
				Binding Antibody to Spike	56.
				PsV Neutralization 50% Titer	21.
				PsV Neutralization 80% Titer	23.

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.30: Table 4i. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Race and ethnic group

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Race and ethnic group					
White Non-Hispanic					
	Negative	D29 fold-rise over D1	456	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	662.84 836.46 26.16 38.69
		D57 fold-rise over D1	456	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	4836.36 6806.21 112.20 153.89
		D57 fold-rise over D29	456	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.31 24.46 10.34 10.05
	Positive	D29 fold-rise over D1	224	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	18243.12 36804.59 96.37 201.23
		D57 fold-rise over D1	224	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	1119992.35 2116938.10 1573.83 3847.47
		D57 fold-rise over D29	224	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	66.01 56.23 21.36 23.51
Communities of Color	Negative	D29 fold-rise over D1	535	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	504.80 691.42 23.29 33.32
		D57 fold-rise over D1	535	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	3570.14 5444.02 106.96 117.71
		D57 fold-rise over D29	535	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	22.15 24.04 11.69 9.45
	Positive	D29 fold-rise over D1	261	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	24128.55 34415.59 88.91 218.94

Table 2.30: Table 4i. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCs) between post-vaccinations/pre-vaccination by Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GM
	D57 fold-rise over D1		261	Binding Antibody to RBD	124
				Binding Antibody to Spike	208
				PsV Neutralization 50% Titer	169
				PsV Neutralization 80% Titer	359
	D57 fold-rise over D29		261	Binding Antibody to RBD	50.
				Binding Antibody to Spike	57.
				PsV Neutralization 50% Titer	23.
				PsV Neutralization 80% Titer	21.

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample size.

Table 2.31: Table 4j. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Race and ethnic group

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
Age, Race and ethnic group					
Age $\geq$ 65 Communities of Color	Negative	D29 fold-rise over D1	253	Binding Antibody to RBD	435.92
				Binding Antibody to Spike	601.64
				PsV Neutralization 50% Titer	20.72
				PsV Neutralization 80% Titer	30.50
		D57 fold-rise over D1	253	Binding Antibody to RBD	3046.19
				Binding Antibody to Spike	4761.87
				PsV Neutralization 50% Titer	93.53
				PsV Neutralization 80% Titer	106.44
		D57 fold-rise over D29	253	Binding Antibody to RBD	21.78
				Binding Antibody to Spike	23.93
				PsV Neutralization 50% Titer	11.63
				PsV Neutralization 80% Titer	9.42
Age $\geq$ 65 White Non-Hispanic	Positive	D29 fold-rise over D1	148	Binding Antibody to RBD	18550.34
				Binding Antibody to Spike	27128.41
				PsV Neutralization 50% Titer	65.48
				PsV Neutralization 80% Titer	174.38
		D57 fold-rise over D1	148	Binding Antibody to RBD	910274.90
				Binding Antibody to Spike	1540863.96
				PsV Neutralization 50% Titer	1132.24
				PsV Neutralization 80% Titer	2732.08
		D57 fold-rise over D29	148	Binding Antibody to RBD	47.81
				Binding Antibody to Spike	53.58
				PsV Neutralization 50% Titer	21.76
				PsV Neutralization 80% Titer	20.27
	Negative	D29 fold-rise over D1	227	Binding Antibody to RBD	587.13
				Binding Antibody to Spike	726.40
				PsV Neutralization 50% Titer	23.26
				PsV Neutralization 80% Titer	35.78
		D57 fold-rise over D1	227	Binding Antibody to RBD	4187.86
				Binding Antibody to Spike	5792.05
				PsV Neutralization 50% Titer	98.69
				PsV Neutralization 80% Titer	138.51
		D57 fold-rise over D29	227	Binding Antibody to RBD	21.61
				Binding Antibody to Spike	23.88
				PsV Neutralization 50% Titer	10.29
				PsV Neutralization 80% Titer	9.94
	Positive	D29 fold-rise over D1	117	Binding Antibody to RBD	13504.88
				Binding Antibody to Spike	26368.53
				PsV Neutralization 50% Titer	76.43

Table 2.31: Table 4j. Geometric mean titer ratios (GMTRs) or geometric mean concentrations (GMCRs) between post-vaccinations/pre-vaccination by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GM
		D57 fold-rise over D1	117	PsV Neutralization 80% Titer Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	168.0 807.0 142.0 110.0 330.0
		D57 fold-rise over D29	117	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	64.0 52.0 19.0 24.0
Age $\geq$ 65 Communities of Color	Negative	D29 fold-rise over D1	282	PsV Neutralization 80% Titer Binding Antibody to RBD	839.0 112.0
		D57 fold-rise over D1	282	Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	34.0 45.0 619.0
		D57 fold-rise over D29	282	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	866.0 170.0 166.0 23.0
	Positive	D29 fold-rise over D1	113	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	797.0 101.0 357.0 616.0
		D57 fold-rise over D1	113	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	519.0 818.0 104.0 120.0
		D57 fold-rise over D29	113	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	65.0 78.0 35.0 25.0
Age $\geq$ 65 White Non-Hispanic	Negative	D29 fold-rise over D1	229	Binding Antibody to RBD	107.0
		D57 fold-rise over D1	229	Binding Antibody to Spike PsV Neutralization 50% Titer PsV Neutralization 80% Titer	146.0 41.0 52.0
		D57 fold-rise over D29	229	Binding Antibody to RBD Binding Antibody to Spike PsV Neutralization 50% Titer	855.0 128.0 186.0

Table 2.31: Table 4j. Geometric mean titer ratios (GMTRs) or geometric mean concentration ratios (GMCRs) between post-vaccinations/pre-vaccination by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	GMTR/GMCR
		D57 fold-rise over D29	229	PsV Neutralization 80% Titer	233.58
				Binding Antibody to RBD	25.28
				Binding Antibody to Spike	26.88
				PsV Neutralization 50% Titer	10.58
				PsV Neutralization 80% Titer	10.46
Positive		D29 fold-rise over D1	107	Binding Antibody to RBD	54235.32
				Binding Antibody to Spike	123185.22
				PsV Neutralization 50% Titer	223.15
				PsV Neutralization 80% Titer	386.42
		D57 fold-rise over D1	107	Binding Antibody to RBD	3665429.27
				Binding Antibody to Spike	8778206.78
				PsV Neutralization 50% Titer	5720.88
				PsV Neutralization 80% Titer	6641.17
		D57 fold-rise over D29	107	Binding Antibody to RBD	70.34
				Binding Antibody to Spike	71.33
				PsV Neutralization 50% Titer	31.34
				PsV Neutralization 80% Titer	21.00

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

2.0.5 Table 5. Ratios of GMTs/GMCs between the vaccine arm vs. placebo arm, by baseline status

Table 2.32: Table 5. Ratios of GMTs/GMCs between the vaccine arm vs. placebo arm, by baseline status

Baseline	Visit	N	Endpoint	Ratios of GMT/GMC	95% CI
All participants					
Negative	Day 29	1062	Binding Antibody to RBD	0.00	(0.00, 0.00)
			Binding Antibody to Spike	0.00	(0.00, 0.00)
			PsV Neutralization 50% Titer	0.20	(0.17, 0.23)
			PsV Neutralization 80% Titer	0.10	(0.08, 0.11)
	Day 57	1062	Binding Antibody to RBD	0.00	(0.00, 0.00)
			Binding Antibody to Spike	0.00	(0.00, 0.00)
			PsV Neutralization 50% Titer	0.01	(0.01, 0.02)
			PsV Neutralization 80% Titer	0.01	(0.01, 0.01)
Positive	Day 29	543	Binding Antibody to RBD	0.30	(0.23, 0.40)
			Binding Antibody to Spike	0.23	(0.18, 0.28)
			PsV Neutralization 50% Titer	0.38	(0.29, 0.49)
			PsV Neutralization 80% Titer	0.46	(0.35, 0.61)
	Day 57	543	Binding Antibody to RBD	0.17	(0.13, 0.22)
			Binding Antibody to Spike	0.12	(0.10, 0.15)
			PsV Neutralization 50% Titer	0.12	(0.08, 0.17)
			PsV Neutralization 80% Titer	0.24	(0.17, 0.35)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the sub-cohort sampling strata.

2.0.6 Table 6. Ratios of GMTs/GMCs between baseline positive participants vs. negative participants, among the vaccinees

Table 2.33: Table 6. Ratios of GMTs/GMCs between baseline positive participants vs. negative participants, among the vaccine recipients

Visit	N	Endpoint	Ratios of GMT/GMC	95% CI
All participants				
Day 29	1180	Binding Antibody to RBD	1.66	(1.21, 2.28)
		Binding Antibody to Spike	1.76	(1.35, 2.31)

Table 2.33: Table 6. Ratios of GMTs/GMCs between baseline positive participants vs. negative participants, among the vaccine recipients (continued)

Visit	N	Endpoint	Ratios of GMT/GMC	95% CI
Day 57	1180	PsV Neutralization 50% Titer	1.47	(1.09, 1.98)
		PsV Neutralization 80% Titer	1.50	(1.08, 2.09)
		Binding Antibody to RBD	2.55	(1.83, 3.54)
		Binding Antibody to Spike	2.50	(1.90, 3.30)
		PsV Neutralization 50% Titer	2.61	(1.71, 4.00)
		PsV Neutralization 80% Titer	2.67	(1.78, 4.00)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

### 2.0.7 Table 7. Ratios of GMTs/GMCs between demographic subgroups among the vaccine recipients

Table 2.34: Table 7. Ratios of GMTs/GMCs between demographic subgroups among the vaccine recipients

Baseline	Visit	Endpoint	N	Ratios of GMT/GMC	95% CI
<b>Age</b>					
Negative	Day 29	Binding Antibody to RBD	847	0.78	(0.63, 0.97)
		Binding Antibody to Spike		0.85	(0.70, 1.03)
		PsV Neutralization 50% Titer		0.94	(0.76, 1.16)
		PsV Neutralization 80% Titer		1.01	(0.80, 1.28)
		Binding Antibody to RBD	907	4.09	(3.20, 5.23)
				1.18	(0.95, 1.47)
				0.89	(0.70, 1.13)
				1.09	(0.76, 1.56)
		Binding Antibody to Spike		3.80	(3.09, 4.67)
				0.93	(0.78, 1.13)
				0.90	(0.73, 1.11)
				1.02	(0.75, 1.39)
		PsV Neutralization 50% Titer		2.91	(2.30, 3.69)
				1.08	(0.88, 1.32)
				0.92	(0.74, 1.16)
				1.15	(0.82, 1.62)
<b>Sex</b>					

Table 2.34: Table 7. Ratios of GMTs/GMCs between demographic subgroups among the vaccine recipients (continued)

Baseline	Visit	Endpoint	N	Ratios of GMT/GMC	95% CI
Day 57	Day 57	PsV Neutralization 80% Titer		2.56	(1.96, 3.34)
				1.09	(0.87, 1.37)
				1.03	(0.80, 1.33)
				1.12	(0.77, 1.63)
		Binding Antibody to RBD	847	0.81	(0.64, 1.02)
	Day 29	Binding Antibody to Spike		0.86	(0.71, 1.05)
		PsV Neutralization 50% Titer		1.13	(0.84, 1.52)
		PsV Neutralization 80% Titer		0.80	(0.61, 1.06)
		Binding Antibody to RBD	907	4.00	(3.09, 5.18)
				0.90	(0.72, 1.13)
Positive	Day 29			0.87	(0.68, 1.12)
				1.10	(0.76, 1.61)
		Binding Antibody to Spike		3.37	(2.71, 4.20)
				0.98	(0.81, 1.19)
				0.98	(0.79, 1.21)
	Day 29	PsV Neutralization 50% Titer		1.01	(0.74, 1.39)
				3.89	(2.76, 5.47)
				1.26	(0.95, 1.69)
				0.96	(0.69, 1.32)
				0.98	(0.60, 1.59)
Positive	Day 29	PsV Neutralization 80% Titer		2.84	(2.05, 3.94)
				0.97	(0.74, 1.28)
				0.97	(0.71, 1.31)
				1.78	(1.13, 2.80)
		Binding Antibody to RBD	241	1.00	(0.65, 1.53)
	Day 29	Binding Antibody to Spike		1.05	(0.75, 1.46)
				1.10	(0.71, 1.71)
				1.21	(0.76, 1.91)
				3.62	(2.25, 5.80)
		Binding Antibody to RBD	273	0.99	(0.66, 1.47)
Positive	Day 29			0.97	(0.61, 1.53)
				0.85	(0.49, 1.47)
		Binding Antibody to Spike		3.76	(2.62, 5.40)
				1.12	(0.82, 1.54)
				0.84	(0.58, 1.21)
	Day 29	PsV Neutralization 50% Titer		1.05	(0.68, 1.62)
				3.15	(1.92, 5.15)
				0.94	(0.62, 1.41)
				0.78	(0.49, 1.25)
				0.96	(0.55, 1.68)
Positive	Day 29	PsV Neutralization 80% Titer		2.96	(1.77, 4.94)
				0.96	(0.63, 1.47)

Table 2.34: Table 7. Ratios of GMTs/GMCs between demographic subgroups among the vaccine recipients (continued)

Baseline	Visit	Endpoint	N	Ratios of GMT/GMC	95% CI
Day 57	Binding Antibody to RBD	241		0.88	(0.54, 1.43)
				1.08	(0.61, 1.94)
				0.97	(0.64, 1.48)
				1.14	(0.84, 1.56)
				1.24	(0.71, 2.18)
	PsV Neutralization 50% Titer	273		0.67	(0.38, 1.20)
				3.31	(2.08, 5.26)
				0.95	(0.64, 1.40)
				0.88	(0.56, 1.37)
				0.56	(0.33, 0.94)
Binding Antibody to Spike	PsV Neutralization 50% Titer	273		2.82	(2.02, 3.93)
				1.05	(0.79, 1.40)
				1.03	(0.74, 1.42)
				0.80	(0.54, 1.17)
				5.60	(2.91, 10.76)
	PsV Neutralization 80% Titer	273		1.00	(0.58, 1.74)
				0.97	(0.52, 1.83)
				0.83	(0.39, 1.77)
				4.09	(2.08, 8.03)
				0.89	(0.51, 1.56)
All participants	Binding Antibody to RBD	273		0.80	(0.42, 1.51)
				1.12	(0.52, 2.41)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

#### 2.0.8 Table 8. Differences of responder rates between the vaccine arm and the placebo arm

Table 2.35: Table 8a. Differences of responder rates between the vaccine arm and the placebo by All participants

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
All participants	Negative	Day 29	1062	Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%, 100.0%)

Table 2.35: Table 8a. Differences of responder rates between the vaccine arm and the placebo arm by All participants (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	65.8%
					(61.7%, 69.9%)
				PsV Neutralization 80% Titer	79.8%
					(76.4%, 83.3%)
	Day 57	1062		Binding Antibody to RBD	100.0%
					(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	95.4%
					(93.6%, 97.2%)
				PsV Neutralization 80% Titer	97.3%
					(95.9%, 98.7%)
Positive	Day 29	543		Binding Antibody to RBD	-0.0%
					(-0.0%, -0.0%)
				Binding Antibody to Spike	-0.0%
					(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	24.6%
					(16.8%, 32.4%)
				PsV Neutralization 80% Titer	7.7%
					(1.3%, 14.1%)
	Day 57	543		Binding Antibody to RBD	-0.0%
					(-0.0%, -0.0%)
				Binding Antibody to Spike	-0.0%
					(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	12.5%
					(7.6%, 17.4%)
				PsV Neutralization 80% Titer	1.6%
					(-0.7%, 3.9%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampled.

Table 2.36: Table 8b. Differences of responder rates between the vaccine arm and the placebo by Age

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Age $j \leq 65$	Negative	Day 29	513	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	513	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	61.1%	46.1%
	Positive	Day 29	294		(55.0%, 67.2%)	(39.9%, 46.1%)
				Binding Antibody to RBD	76.7%	65.3%
		Day 57	294	Binding Antibody to Spike	(71.4%, 81.9%)	(59.4%, 65.3%)
				PsV Neutralization 50% Titer	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
Age $i = 65$	Negative	Day 29	549	Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	95.1%	88.4%
		Day 57	294	PsV Neutralization 50% Titer	(92.4%, 97.8%)	(84.4%, 90.5%)
				PsV Neutralization 80% Titer	96.9%	93.5%
					(94.7%, 99.1%)	(90.5%, 93.5%)
	Positive	Day 29	294	Binding Antibody to RBD	-0.0%	0.3%
				Binding Antibody to Spike	(-0.0%, -0.0%)	(-0.6%, -0.3%)
		Day 57	294	PsV Neutralization 50% Titer	-0.0%	-0.0%
				PsV Neutralization 80% Titer	(-0.0%, -0.0%)	(-0.0%, -0.0%)
				Binding Antibody to RBD	26.5%	20.0%
					(15.7%, 37.4%)	(9.0%, 20.0%)
				Binding Antibody to Spike	7.0%	13.0%
				PsV Neutralization 50% Titer	(-2.1%, 16.1%)	(2.1%, 13.0%)
				PsV Neutralization 80% Titer	-0.0%	-0.0%
					(-0.0%, -0.0%)	(-0.0%, -0.0%)
				Binding Antibody to RBD	-0.0%	-0.0%
				Binding Antibody to Spike	(-0.0%, -0.0%)	(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	15.0%	20.6%
					(7.9%, 22.2%)	(12.5%, 20.6%)
				PsV Neutralization 80% Titer	1.3%	4.8%
					(-1.9%, 4.5%)	(-0.1%, 4.8%)
	Negative	Day 29	549	Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	294	PsV Neutralization 50% Titer	83.4%	72.6%
					(79.0%, 87.8%)	(67.3%, 72.6%)

Table 2.36: Table 8b. Differences of responder rates between the vaccine arm and the by Age (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	91.6% (88.3%, 94.9%)
	Day 57	549		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.7% (94.6%, 98.9%)
				PsV Neutralization 80% Titer	98.9% (97.7%, 100.2%)
Positive	Day 29	249		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	16.3% (7.2%, 25.4%)
				PsV Neutralization 80% Titer	10.6% (3.3%, 17.9%)
	Day 57	249		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	2.1% (-1.8%, 6.1%)
				PsV Neutralization 80% Titer	2.9% (-0.0%, 5.8%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.37: Table 8c. Differences of responder rates between the vaccine arm and the placebo by Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
At-risk	Negative	Day 29	541	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	541	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	65.2%	51.1%
	Positive	Day 29	246		(59.4%, 71.1%)	(45.0%, 67.1%)
				PsV Neutralization 80% Titer	78.7%	67.1%
		Day 57	246	Binding Antibody to RBD	(73.7%, 83.7%)	(61.4%, 89.6%)
					100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%, 100.0%)
Not at-risk	Negative	Day 29	521	PsV Neutralization 50% Titer	93.7%	89.6%
					(90.7%, 96.7%)	(85.9%, 94.4%)
		Day 57	246	PsV Neutralization 80% Titer	97.4%	94.4%
					(95.5%, 99.3%)	(91.6%, 0.9%)
				Binding Antibody to RBD	0.0%	0.9%
	Positive	Day 29	246		(0.0%, 0.0%)	(-0.7%, 0.0%)
				Binding Antibody to Spike	0.0%	0.0%
		Day 57	246		(0.0%, 0.0%)	(0.0%, 0.0%)
				PsV Neutralization 50% Titer	21.5%	21.6%
					(10.2%, 32.8%)	(9.3%, 18.3%)
Not at-risk	Positive	Day 29	246	PsV Neutralization 80% Titer	14.3%	(7.1%, 0.0%)
					(4.0%, 24.5%)	(0.0%, 0.0%)
		Day 57	246	Binding Antibody to RBD	0.0%	0.0%
					(0.0%, 0.0%)	(0.0%, 0.0%)
				Binding Antibody to Spike	0.0%	0.0%
	Not at-risk	Day 29	521		(0.0%, 0.0%)	(0.0%, 0.0%)
				PsV Neutralization 50% Titer	8.1%	10.5%
		Day 57	521		(1.4%, 14.7%)	(2.3%, 4.6%)
				PsV Neutralization 80% Titer	3.0%	(0.3%, 6.8%)
					(-0.8%, 6.8%)	(0.0%, 4.6%)

Table 2.37: Table 8c. Differences of responder rates between the vaccine arm and the by Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	80.3% (75.4%, 85.2%)
	Day 57	521		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.1%
					(93.7%, 98.5%)
				PsV Neutralization 80% Titer	97.3% (95.3%, 99.3%)
Positive	Day 29	297		Binding Antibody to RBD	-0.0% (-0.0%, -0.0%)
				Binding Antibody to Spike	-0.0% (-0.0%, -0.0%)
				PsV Neutralization 50% Titer	25.4% (14.7%, 36.0%)
				PsV Neutralization 80% Titer	5.8%
					(-2.6%, 14.3%)
	Day 57	297		Binding Antibody to RBD	-0.0% (-0.0%, -0.0%)
				Binding Antibody to Spike	-0.0% (-0.0%, -0.0%)
				PsV Neutralization 50% Titer	13.8% (7.1%, 20.6%)
				PsV Neutralization 80% Titer	1.2% (-1.8%, 4.2%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.38: Table 8d. Differences of responder rates between the vaccine arm and the placebo by Age, Risk for Severe Covid-19

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Age $\geq$ 65 At-risk	Negative	Day 29	257	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	257	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	55.8%	40.2%
	Positive	Day 29	148		(47.0%, 64.6%)	(31.5%)
				PsV Neutralization 80% Titer	72.5%	60.2%
		Day 57	148	Binding Antibody to RBD	(64.6%, 80.4%)	(51.5%)
					100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
Age $\geq$ 65 Not at-risk	Negative	Day 29	256	PsV Neutralization 50% Titer	92.3%	86.7%
					(87.6%, 97.0%)	(80.7%)
		Day 57	148	PsV Neutralization 80% Titer	95.7%	91.9%
					(92.1%, 99.3%)	(87.1%)
				Binding Antibody to RBD	0.0%	1.3%
	Positive	Day 29	148		(0.0%, 0.0%)	(-1.2%)
				Binding Antibody to Spike	0.0%	0.0%
		Day 57	148		(0.0%, 0.0%)	(0.0%,)
				PsV Neutralization 50% Titer	21.9%	18.8%
					(6.6%, 37.3%)	(2.9%,)
	Not at-risk	Day 29	256	PsV Neutralization 80% Titer	10.1%	13.9%
					(-3.9%, 24.2%)	(-1.5%)
		Day 57	148	Binding Antibody to RBD	0.0%	0.0%
					(0.0%, 0.0%)	(0.0%,)
				Binding Antibody to Spike	0.0%	0.0%
Age < 65 At-risk	Negative	Day 29	256		(0.0%, 0.0%)	(0.0%,)
				PsV Neutralization 50% Titer	10.6%	11.8%
		Day 57	148		(1.4%, 19.7%)	(0.8%,)
				PsV Neutralization 80% Titer	1.3%	2.6%
					(-3.2%, 5.8%)	(-2.5%)
	Positive	Day 29	148	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	148	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	62.5%	47.7%
	Not at-risk	Day 29	256		(53.9%, 71.1%)	(38.8%)
				PsV Neutralization 80% Titer	1.3%	2.6%
		Day 57	148		(-3.2%, 5.8%)	(-2.5%)
				Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	148	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	62.5%	47.7%
					(53.9%, 71.1%)	(38.8%)

Table 2.38: Table 8d. Differences of responder rates between the vaccine arm and the by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	77.8% (70.4%, 85.1%)
	Day 57	256		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	95.8% (92.3%, 99.4%)
				PsV Neutralization 80% Titer	97.2% (94.3%, 100.1%)
Positive	Day 29	146		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	27.6% (12.2%, 43.1%)
				PsV Neutralization 80% Titer	6.3% (-6.3%, 19.0%)
	Day 57	146		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	16.1% (5.8%, 26.5%)
				PsV Neutralization 80% Titer	1.3% (-3.3%, 5.9%)
Age $\geq$ 65 At-risk	Negative	Day 29	284	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	79.7% (72.9%, 86.6%)
				PsV Neutralization 80% Titer	88.2% (82.8%, 93.7%)
	Day 57	284		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)

Table 2.38: Table 8d. Differences of responder rates between the vaccine arm and the placebo by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold	
Positive	Day 29	98	PsV Neutralization 50% Titer	95.7%	94.1%		
				(92.3%, 99.2%)	(90.0%)		
			PsV Neutralization 80% Titer	100.0%	98.3%		
				(100.0%, 100.0%)	(96.1%)		
				Binding Antibody to RBD	0.0%	0.0%	
	Day 57	98		(0.0%, 0.0%)	(0.0%,		
				Binding Antibody to Spike	0.0%	0.0%	
				(0.0%, 0.0%)	(0.0%,		
		PsV Neutralization 50% Titer	20.4%	27.4%			
			(5.5%, 35.2%)	(8.8%,			
Age $i = 65$ Not at-risk	Negative	Day 29	PsV Neutralization 80% Titer	22.9%	27.3%		
				(9.5%, 36.2%)	(13.5%)		
			Binding Antibody to RBD	0.0%	0.0%		
				(0.0%, 0.0%)	(0.0%,		
				Binding Antibody to Spike	0.0%	0.0%	
	Day 57	265	PsV Neutralization 50% Titer	2.9%	7.6%		
				(-6.0%, 11.7%)	(-3.9%)		
			PsV Neutralization 80% Titer	6.7%	8.9%		
				(-0.1%, 13.5%)	(1.1%,		
				100.0%	100.0%		
Positive	Day 29	151	Binding Antibody to RBD	(100.0%, 100.0%)	(100.0%)		
				100.0%	100.0%		
			Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)		
				100.0%	100.0%		
				(100.0%, 100.0%)	(100.0%)		
	Day 57	265	PsV Neutralization 50% Titer	87.3%	77.6%		
				(81.7%, 92.9%)	(70.6%)		
			PsV Neutralization 80% Titer	95.2%	84.6%		
				(91.6%, 98.8%)	(78.6%)		
				100.0%	100.0%		
Positive	Day 29	151	Binding Antibody to RBD	(100.0%, 100.0%)	(100.0%)		
				100.0%	100.0%		
			Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)		
				100.0%	100.0%		
				(100.0%, 100.0%)	(100.0%)		
	Day 57	265	PsV Neutralization 50% Titer	97.8%	97.4%		
				(95.3%, 100.3%)	(94.7%)		
			PsV Neutralization 80% Titer	97.8%	97.8%		
				(95.3%, 100.3%)	(95.3%)		
				0.0%	0.0%		
Positive	Day 29	151	Binding Antibody to RBD	(-0.0%, 0.0%)	(-0.0%)		
				0.0%	0.0%		
			Binding Antibody to Spike	0.0%	0.0%		
				(0.0%, 0.0%)	(0.0%)		
				0.0%	0.0%		

Table 2.38: Table 8d. Differences of responder rates between the vaccine arm and the by Age, Risk for Severe Covid-19 (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	13.8%
					(2.2%, 25.4%)
				PsV Neutralization 80% Titer	3.2%
					(-4.9%, 11.4%)
Day 57	151			Binding Antibody to RBD	0.0%
					(-0.0%, 0.0%)
				Binding Antibody to Spike	0.0%
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	1.9%
					(-1.2%, 5.1%)
				PsV Neutralization 80% Titer	0.6%
					(-1.2%, 2.4%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.39: Table 8e. Differences of responder rates between the vaccine arm and the placebo by Sex

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Female	Negative	Day 29	597	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	597	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	65.7%	52.0%
	Positive	Day 29	298		(60.1%, 71.2%)	(46.2%, 52.0%)
				PsV Neutralization 80% Titer	78.8%	68.3%
		Day 57	298	Binding Antibody to RBD	(74.1%, 83.6%)	(62.9%, 71.1%)
					100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%, 100.0%)
Male	Negative	Day 29	465	PsV Neutralization 50% Titer	95.0%	91.1%
					(92.5%, 97.5%)	(87.8%, 92.2%)
		Day 57	465	PsV Neutralization 80% Titer	98.4%	94.7%
					(97.0%, 99.9%)	(92.2%, 94.7%)
				Binding Antibody to RBD	-0.0%	0.3%
	Positive	Day 29	298		(-0.0%, 0.0%)	(-0.6%, 0.3%)
				Binding Antibody to Spike	-0.0%	-0.0%
		Day 57	298		(-0.0%, 0.0%)	(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	21.4%	21.3%
					(10.6%, 32.2%)	(10.2%, 21.3%)
		Day 57	298	PsV Neutralization 80% Titer	2.0%	13.4%
					(-6.7%, 10.6%)	(2.8%, 13.4%)
				Binding Antibody to RBD	-0.0%	-0.0%
		Day 29	465		(-0.0%, 0.0%)	(-0.0%, -0.0%)
				Binding Antibody to Spike	-0.0%	-0.0%
		Day 57	465		(-0.0%, 0.0%)	(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	15.0%	19.0%
					(8.1%, 21.8%)	(11.1%, 19.0%)
		Day 29	465	PsV Neutralization 80% Titer	3.8%	6.7%
					(0.4%, 7.2%)	(1.6%, 6.7%)
		Day 57	465	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 29	465	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	66.1%	51.4%
		Day 57	465		(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 29	465	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)
				Binding Antibody to RBD	100.0%	100.0%
		Day 29	465		(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%, 100.0%)
		Day 57	465	PsV Neutralization 50% Titer	66.1%	51.4%
					(59.9%, 72.2%)	(44.9%, 51.4%)

Table 2.39: Table 8e. Differences of responder rates between the vaccine arm and the by Sex (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	81.1% (76.1%, 86.2%)
	Day 57	465		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.0% (93.5%, 98.6%)
				PsV Neutralization 80% Titer	95.9% (93.3%, 98.5%)
Positive	Day 29	245		Binding Antibody to RBD	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	28.3% (17.1%, 39.6%)
				PsV Neutralization 80% Titer	15.4% (5.9%, 25.0%)
	Day 57	245		Binding Antibody to RBD	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	9.1% (2.1%, 16.0%)
				PsV Neutralization 80% Titer	-1.4% (-4.2%, 1.5%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.40: Table 8f. Differences of responder rates between the vaccine arm and the placebo by Age, sex

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Age $\geq$ 65 Female	Negative	Day 29	291	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	291	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	61.1%	46.6%
	Positive	Day 29	166		(53.0%, 69.2%)	(38.3%)
				Binding Antibody to RBD	75.0%	65.2%
		Day 57	166	Binding Antibody to Spike	(67.8%, 82.1%)	(57.3%)
				PsV Neutralization 50% Titer	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
Age $\geq$ 65 Male	Negative	Day 29	222	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	222	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	61.0%	45.5%
	Positive	Day 29	166		(51.7%, 70.4%)	(36.0%)
				Binding Antibody to RBD	0.0%	0.4%
		Day 57	166	Binding Antibody to Spike	(-0.0%, 0.0%)	(-1.0%)
				PsV Neutralization 50% Titer	0.0%	0.0%
					(-0.0%, 0.0%)	(-0.0%)

Table 2.40: Table 8f. Differences of responder rates between the vaccine arm and the by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	78.8% (71.0%, 86.6%)
	Day 57	222		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	95.9%
					(92.1%, 99.7%)
				PsV Neutralization 80% Titer	95.1% (90.9%, 99.2%)
Positive	Day 29	128		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	33.7% (17.8%, 49.6%)
				PsV Neutralization 80% Titer	19.6%
					(5.7%, 33.5%)
	Day 57	128		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	11.9% (1.5%, 22.3%)
				PsV Neutralization 80% Titer	-2.4% (-6.4%, 1.6%)
Age $\geq$ 65 Female	Negative	Day 29	306	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	82.4% (76.1%, 88.7%)
				PsV Neutralization 80% Titer	93.1% (89.0%, 97.3%)
	Day 57	306		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)

Table 2.40: Table 8f. Differences of responder rates between the vaccine arm and the placebo by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Age $i = 65$ Male	Positive	Day 29	132	PsV Neutralization 50% Titer	96.9% (94.0%, 99.8%)	95.7% (92.4%, 99.8%)
				PsV Neutralization 80% Titer	98.9% (97.1%, 100.6%)	98.1% (95.8%, 100.6%)
		Day 57	132	Binding Antibody to RBD	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	18.6% (5.7%, 31.5%)	24.4% (8.7%, 31.5%)
	Negative	Day 29	243	PsV Neutralization 80% Titer	17.5% (6.6%, 28.4%)	24.4% (12.3%, 28.4%)
				Binding Antibody to RBD	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
		Day 57	243	Binding Antibody to Spike	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	3.6% (-2.3%, 9.5%)	6.9% (-0.1%, 9.5%)
				PsV Neutralization 80% Titer	3.3% (-0.8%, 7.5%)	3.3% (-0.8%, 7.5%)

Table 2.40: Table 8f. Differences of responder rates between the vaccine arm and the by Age, sex (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	14.2%
					(1.2%, 27.2%)
				PsV Neutralization 80% Titer	3.6%
					(-5.9%, 13.1%)
Day 57	117			Binding Antibody to RBD	0.0%
					(-0.0%, 0.0%)
				Binding Antibody to Spike	0.0%
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	0.6%
					(-4.7%, 5.9%)
				PsV Neutralization 80% Titer	2.4%
					(-1.6%, 6.5%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sample.

Table 2.41: Table 8g. Differences of responder rates between the vaccine arm and the placebo by Hispanic or Latino ethnicity

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Hispanic or Latino	Negative	Day 29	125	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
		Day 57	125	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	56.2%	44.8%
	Positive	Day 29	77		(44.2%, 68.2%)	(32.8%)
				PsV Neutralization 80% Titer	80.3%	69.3%
		Day 57	77	Binding Antibody to RBD	(70.6%, 89.9%)	(58.2%)
					100.0%	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
Not Hispanic or Latino	Negative	Day 29	844	PsV Neutralization 50% Titer	97.8%	90.5%
					(94.3%, 101.4%)	(83.4%)
		Day 57	77	PsV Neutralization 80% Titer	92.2%	90.6%
					(85.7%, 98.7%)	(83.5%)
				Binding Antibody to RBD	-0.0%	-0.0%
	Positive	Day 29	77		(-0.0%, 0.0%)	(-0.0%)
				Binding Antibody to Spike	-0.0%	-0.0%
		Day 57	77		(-0.0%, 0.0%)	(-0.0%)
				PsV Neutralization 50% Titer	34.8%	36.5%
					(14.2%, 55.4%)	(15.5%)
Not Hispanic or Latino	Positive	Day 29	77	PsV Neutralization 80% Titer	10.1%	25.4%
					(-7.4%, 27.7%)	(4.3%,
		Day 57	77	Binding Antibody to RBD	-0.0%	-0.0%
					(-0.0%, 0.0%)	(-0.0%)
				Binding Antibody to Spike	-0.0%	-0.0%
	Not Hispanic or Latino	Day 29	844		(-0.0%, 0.0%)	(-0.0%)
				PsV Neutralization 50% Titer	10.8%	12.0%
		Day 57	77		(-3.0%, 24.7%)	(-2.1%)
				PsV Neutralization 80% Titer	-3.5%	1.7%
					(-12.0%, 5.0%)	(-9.3%)

Table 2.41: Table 8g. Differences of responder rates between the vaccine arm and the by Hispanic or Latino ethnicity (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
				PsV Neutralization 80% Titer	80.2% (76.2%, 84.1%)
	Day 57	844		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	95.0% (92.9%, 97.2%)
				PsV Neutralization 80% Titer	97.7% (96.2%, 99.2%)
Positive	Day 29	406		Binding Antibody to RBD	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	23.5% (14.5%, 32.6%)
				PsV Neutralization 80% Titer	8.5% (0.8%, 16.2%)
	Day 57	406		Binding Antibody to RBD	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	11.7% (6.4%, 16.9%)
				PsV Neutralization 80% Titer	1.7% (-0.4%, 3.7%)
Not reported and unknown	Negative	Day 29	93	Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	67.6% (55.0%, 80.3%)
				PsV Neutralization 80% Titer	76.3% (64.8%, 87.7%)
	Day 57	93		Binding Antibody to RBD	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)

Table 2.41: Table 8g. Differences of responder rates between the vaccine arm and the placebo arm by Hispanic or Latino ethnicity (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold Rise
				PsV Neutralization 50% Titer	96.6% (91.7%, 101.5%)	91.4% (83.9%, 98.9%)
				PsV Neutralization 80% Titer	100.0% (100.0%, 100.0%)	93.4% (86.7%, 98.9%)
Positive	Day 29	60		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	15.5% (-9.1%, 40.2%)	29.1% (5.1%, 54.2%)
				PsV Neutralization 80% Titer	-1.0% (-11.9%, 9.9%)	-7.5% (-27.3%, 19.8%)
	Day 57	60		Binding Antibody to RBD	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	20.6% (1.4%, 39.9%)	40.2% (19.5%, 59.7%)
				PsV Neutralization 80% Titer	9.0% (-1.4%, 19.3%)	17.2% (3.6%, 36.3%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the by Race

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
Not reported and unknown	Negative	Day 29	98	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
		Day 57	98	PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)
				Binding Antibody to RBD	63.8%
	Positive	Day 29	48	Binding Antibody to Spike	(50.3%, 77.3%)
				PsV Neutralization 50% Titer	78.0%
		Day 57	48	PsV Neutralization 80% Titer	(66.4%, 89.6%)
				Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
American Indian or Alaska Native	Negative	Day 29	27	PsV Neutralization 50% Titer	97.9%
				PsV Neutralization 80% Titer	(93.9%, 101.9%)
		Day 57	48	Binding Antibody to RBD	99.1%
				Binding Antibody to Spike	(96.4%, 101.8%)
				PsV Neutralization 50% Titer	-0.0%
	Positive	Day 29	48	PsV Neutralization 80% Titer	(-0.0%, 0.0%)
				Binding Antibody to RBD	-0.0%
		Day 57	48	Binding Antibody to Spike	(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	38.0%
				PsV Neutralization 80% Titer	(12.4%, 63.6%)
	American Indian or Alaska Native	Day 29	27	Binding Antibody to RBD	23.1%
				Binding Antibody to Spike	(1.8%, 44.4%)
		Day 57	48	PsV Neutralization 50% Titer	-0.0%
				PsV Neutralization 80% Titer	(-0.0%, 0.0%)
				Binding Antibody to RBD	-4.6%
	American Indian or Alaska Native	Day 29	27	Binding Antibody to Spike	(-13.5%, 4.3%)
				PsV Neutralization 50% Titer	-0.0%
		Day 57	48	PsV Neutralization 80% Titer	(-0.0%, 0.0%)
				Binding Antibody to RBD	-0.0%
				Binding Antibody to Spike	(-0.0%, 0.0%)
	American Indian or Alaska Native	Day 29	27	PsV Neutralization 50% Titer	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
		Day 57	48	PsV Neutralization 50% Titer	100.0%
				Binding Antibody to RBD	(100.0%, 100.0%)
				Binding Antibody to Spike	62.8%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the placebo by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Asian	Positive	Day 29	17	PsV Neutralization 80% Titer	(36.1%, 89.4%)	(21.9%)
				75.8%	51.5%	
				(52.1%, 99.4%)	(24.0%)	
				Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
	Negative	Day 29	84	Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	98.2%	98.2%
					(90.9%, 105.5%)	(90.9%)
				PsV Neutralization 80% Titer	98.2%	98.2%
White	Positive	Day 57	17	Binding Antibody to RBD	-0.0%	-0.0%
					(-0.0%, -0.0%)	(-0.0%)
				Binding Antibody to Spike	-0.0%	-0.0%
					(-0.0%, -0.0%)	(-0.0%)
				PsV Neutralization 50% Titer	61.7%	23.3%
	Negative	Day 57	84		(31.2%, 92.2%)	(-28.1%)
				PsV Neutralization 80% Titer	12.0%	28.4%
					(-18.9%, 42.9%)	(-20.5%)
				Binding Antibody to RBD	-0.0%	-0.0%
					(-0.0%, -0.0%)	(-0.0%)
Black	Positive	Day 29	17	Binding Antibody to Spike	-0.0%	-0.0%
					(-0.0%, -0.0%)	(-0.0%)
				PsV Neutralization 50% Titer	8.8%	8.8%
					(-9.0%, 26.5%)	(-9.0%)
				PsV Neutralization 80% Titer	-0.0%	-0.0%
	Negative	Day 29	84	Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				Binding Antibody to Spike	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	65.5%	45.7%
Hispanic	Positive	Day 57	17		(49.5%, 81.5%)	(28.9%)
				PsV Neutralization 80% Titer	89.1%	69.3%
					(78.5%, 99.6%)	(53.8%)
				Binding Antibody to RBD	100.0%	100.0%
					(100.0%, 100.0%)	(100.0%)
	Negative	Day 57	84	Binding Antibody to Spike	100.0%	100.0%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
White or Hispanic	Positive	Day 29	46	PsV Neutralization 50% Titer	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	98.3%
		Day 57	46	PsV Neutralization 80% Titer	(93.9%, 102.7%)
				PsV Neutralization 80% Titer	98.4%
				PsV Neutralization 50% Titer	(94.2%, 102.6%)
	Negative	Day 29	216	Binding Antibody to RBD	0.0%
				Binding Antibody to Spike	(-0.0%, 0.0%)
		Day 57	216	PsV Neutralization 50% Titer	-23.2%
				PsV Neutralization 80% Titer	(-51.8%, 5.5%)
				PsV Neutralization 80% Titer	-20.6%
Black or African American	Positive	Day 29	91	Binding Antibody to RBD	(-46.2%, 5.1%)
				Binding Antibody to Spike	0.0%
		Day 57	91	PsV Neutralization 50% Titer	(-0.0%, 0.0%)
				PsV Neutralization 80% Titer	15.3%
				PsV Neutralization 80% Titer	(-5.9%, 36.5%)
	Negative	Day 29	216	PsV Neutralization 50% Titer	-9.0%
				PsV Neutralization 80% Titer	(-21.7%, 3.7%)
		Day 57	216	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	63.9%
		Day 57	216	PsV Neutralization 80% Titer	(54.7%, 73.1%)
				Binding Antibody to RBD	76.7%
				Binding Antibody to Spike	(68.6%, 84.9%)
	Positive	Day 29	91	PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)
		Day 57	91	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	89.6%
		Day 57	91	PsV Neutralization 80% Titer	(83.7%, 95.5%)
				Binding Antibody to RBD	96.2%
				Binding Antibody to Spike	(92.5%, 99.9%)

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the placebo by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Multiracial	Negative	Day 29	62	Binding Antibody to Spike	(0.0%, 0.0%)	(0.0%, 0.0%)
				PsV Neutralization 50% Titer	0.0%	0.0%
				PsV Neutralization 80% Titer	(0.0%, 0.0%)	(0.0%, 0.0%)
				Binding Antibody to RBD	28.8%	9.5%
				PsV Neutralization 50% Titer	(8.9%, 48.8%)	(-11.0%, 11.0%)
	Positive	Day 29	28	PsV Neutralization 80% Titer	20.7%	19.7%
				Binding Antibody to Spike	(4.8%, 36.6%)	(0.1%, 1.1%)
				Binding Antibody to RBD	0.0%	0.0%
				PsV Neutralization 50% Titer	(0.0%, 0.0%)	(0.0%, 0.0%)
				PsV Neutralization 80% Titer	8.8%	18.0%
White	Negative	Day 57	91	Binding Antibody to Spike	(-1.6%, 19.2%)	(4.0%, 4.0%)
				PsV Neutralization 50% Titer	2.3%	2.3%
				PsV Neutralization 80% Titer	(-2.5%, 7.1%)	(-2.5%, 7.1%)
				Binding Antibody to RBD	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%, 100.0%)
	Positive	Day 57	62	Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 80% Titer	47.8%	33.7%
				Binding Antibody to RBD	(31.9%, 63.8%)	(18.6%, 33.7%)
				PsV Neutralization 80% Titer	77.0%	67.0%
Black	Negative	Day 29	62	Binding Antibody to Spike	(63.6%, 90.4%)	(52.1%, 52.1%)
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%, 100.0%)
				Binding Antibody to RBD	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%, 100.0%)
	Positive	Day 29	28	Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%, 100.0%)
				PsV Neutralization 80% Titer	100.0%	97.2%
				Binding Antibody to RBD	(100.0%, 100.0%)	(91.8%, 97.2%)
				PsV Neutralization 80% Titer	18.9%	49.2%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
		Day 57	28	Binding Antibody to RBD	(-4.3%, 42.1%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	0.0% (0.0%, 0.0%)
				PsV Neutralization 80% Titer	35.8% (12.1%, 59.5%)
Native Hawaiian or Other Pacific Islander	Negative	Day 29	20	Binding Antibody to RBD	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	100.0% (100.0%, 100.0%)
				PsV Neutralization 80% Titer	69.0% (32.4%, 105.7%)
		Day 57	20	Binding Antibody to RBD	92.6% (71.8%, 113.3%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	100.0% (100.0%, 100.0%)
				PsV Neutralization 80% Titer	100.0% (100.0%, 100.0%)
	Positive	Day 29	7	Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	11.6% (-43.7%, 66.8%)
				PsV Neutralization 80% Titer	0.0% (-0.0%, 0.0%)
		Day 57	7	Binding Antibody to RBD	0.0% (-0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (-0.0%, 0.0%)
				PsV Neutralization 50% Titer	14.7%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the placebo by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Other	Negative	Day 29	28	PsV Neutralization 80% Titer	(-46.5%, 75.8%)	(-46.5%
				Binding Antibody to RBD	0.0%	0.0%
		Day 57	28	Binding Antibody to Spike	(-0.0%, 0.0%)	(-0.0%
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%
	Positive	Day 29	24	Binding Antibody to Spike	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%
		Day 57	24	Binding Antibody to RBD	74.2%	65.2%
				Binding Antibody to Spike	(36.8%, 111.7%)	(24.4%
				PsV Neutralization 80% Titer	67.4%	64.1%
White	Negative	Day 29	43	PsV Neutralization 80% Titer	(27.2%, 107.5%)	(23.0%
				Binding Antibody to RBD	100.0%	100.0%
		Day 57	43	Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%
				PsV Neutralization 50% Titer	96.7%	96.7%
				PsV Neutralization 80% Titer	(81.4%, 112.0%)	(81.4%
Black	Negative	Day 29	43	PsV Neutralization 80% Titer	84.6%	84.6%
				Binding Antibody to RBD	(53.8%, 115.5%)	(53.8%
		Day 57	43	Binding Antibody to Spike	-0.0%	-0.0%
				PsV Neutralization 50% Titer	(-0.0%, -0.0%)	(-0.0%
				PsV Neutralization 80% Titer	59.9%	56.4%
	Positive	Day 29	43	PsV Neutralization 80% Titer	(26.8%, 93.1%)	(24.1%
				Binding Antibody to RBD	4.0%	51.5%
		Day 57	43	Binding Antibody to Spike	(-27.4%, 35.4%)	(16.1%
				PsV Neutralization 50% Titer	-0.0%	-0.0%
				PsV Neutralization 80% Titer	(-0.0%, -0.0%)	(-0.0%
Asian	Negative	Day 29	43	Binding Antibody to Spike	-0.0%	-0.0%
				PsV Neutralization 50% Titer	(-0.0%, -0.0%)	(-0.0%
		Day 57	43	Binding Antibody to RBD	-11.5%	-7.9%
				Binding Antibody to Spike	(-35.6%, 12.6%)	(-34.2%
				PsV Neutralization 80% Titer	-0.0%	15.5%
	Positive	Day 29	43	PsV Neutralization 80% Titer	(-0.0%, -0.0%)	(-5.6%
				Binding Antibody to RBD	100.0%	100.0%
		Day 57	43	Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)	(100.0%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	74.8%
					(56.5%, 93.0%)
				PsV Neutralization 80% Titer	82.4%
					(66.4%, 98.4%)
	Day 57	43		Binding Antibody to RBD	100.0%
					(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	92.2%
					(80.9%, 103.5%)
				PsV Neutralization 80% Titer	100.0%
					(100.0%, 100.0%)
Positive	Day 29	38		Binding Antibody to RBD	0.0%
					(0.0%, 0.0%)
				Binding Antibody to Spike	0.0%
					(0.0%, 0.0%)
				PsV Neutralization 50% Titer	2.8%
					(-27.8%, 33.4%)
				PsV Neutralization 80% Titer	-0.8%
					(-13.4%, 11.7%)
	Day 57	38		Binding Antibody to RBD	0.0%
					(0.0%, 0.0%)
				Binding Antibody to Spike	0.0%
					(0.0%, 0.0%)
				PsV Neutralization 50% Titer	22.5%
					(-3.6%, 48.5%)
				PsV Neutralization 80% Titer	14.1%
					(-1.1%, 29.3%)
White Non-Hispanic	Negative	Day 29	456	Binding Antibody to RBD	100.0%
					(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	68.9%
					(62.7%, 75.0%)
				PsV Neutralization 80% Titer	80.7%
					(75.4%, 86.0%)
	Day 57	456		Binding Antibody to RBD	100.0%

Table 2.42: Table 8h. Differences of responder rates between the vaccine arm and the placebo by Race (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
Positive	Day 29	224		Binding Antibody to Spike	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 50% Titer	100.0%	100.0%
				PsV Neutralization 50% Titer	(100.0%, 100.0%)	(100.0%)
				PsV Neutralization 80% Titer	96.6%	92.4%
				PsV Neutralization 80% Titer	(94.1%, 99.0%)	(88.9%)
	Day 57	224		Binding Antibody to RBD	98.2%	95.2%
				Binding Antibody to Spike	(96.4%, 99.9%)	(92.4%)
				Binding Antibody to RBD	-0.0%	0.5%
				Binding Antibody to Spike	(-0.0%, -0.0%)	(-0.8%)
				PsV Neutralization 50% Titer	23.5%	11.2%
				PsV Neutralization 50% Titer	(11.3%, 35.6%)	(-1.9%)
				PsV Neutralization 80% Titer	7.4%	12.3%
				PsV Neutralization 80% Titer	(-3.1%, 17.9%)	(0.3%,
				Binding Antibody to RBD	-0.0%	-0.0%
				Binding Antibody to Spike	(-0.0%, -0.0%)	(-0.0%)
				PsV Neutralization 50% Titer	14.7%	17.3%
				PsV Neutralization 80% Titer	(7.7%, 21.6%)	(8.7%,
				PsV Neutralization 80% Titer	2.5%	1.6%
				PsV Neutralization 80% Titer	(-1.0%, 6.1%)	(-3.3%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.43: Table 8i. Differences of responder rates between the vaccine arm and the by Race and ethnic group

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
White Non-Hispanic	Negative	Day 29	456	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
		Day 57	456	PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(62.7%, 75.0%)
				Binding Antibody to RBD	80.7%
	Positive	Day 29	224	Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.6%
		Day 57	224	PsV Neutralization 80% Titer	(94.1%, 99.0%)
				Binding Antibody to RBD	98.2%
				Binding Antibody to Spike	(96.4%, 99.9%)
Communities of Color	Negative	Day 29	535	PsV Neutralization 50% Titer	-0.0%
				PsV Neutralization 80% Titer	(-0.0%, -0.0%)
		Day 57	224	Binding Antibody to RBD	-0.0%
				Binding Antibody to Spike	(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	23.5%
	Positive	Day 29	224	PsV Neutralization 80% Titer	(11.3%, 35.6%)
				Binding Antibody to RBD	7.4%
		Day 57	224	Binding Antibody to Spike	(-3.1%, 17.9%)
				PsV Neutralization 50% Titer	-0.0%
				PsV Neutralization 80% Titer	(-0.0%, -0.0%)
				Binding Antibody to RBD	-0.0%
				Binding Antibody to Spike	(-0.0%, -0.0%)
				PsV Neutralization 50% Titer	14.7%
				PsV Neutralization 80% Titer	(7.7%, 21.6%)
				Binding Antibody to RBD	2.5%
				Binding Antibody to Spike	(-1.0%, 6.1%)
				PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)
				Binding Antibody to RBD	63.0%
				Binding Antibody to Spike	(57.1%, 68.9%)

Table 2.43: Table 8i. Differences of responder rates between the vaccine arm and the placebo by Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
				PsV Neutralization 80% Titer	79.1% (74.2%, 84.0%)	66.7% (61.0%)
	Day 57	535		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0% (100.0%)
				PsV Neutralization 50% Titer	94.8% (92.1%, 97.5%)	88.7% (84.9%)
				PsV Neutralization 80% Titer	97.2% (95.2%, 99.2%)	94.7% (92.0%)
Positive	Day 29	261		Binding Antibody to RBD	-0.0% (-0.0%, 0.0%)	-0.0% (-0.0%)
				Binding Antibody to Spike	-0.0% (-0.0%, 0.0%)	-0.0% (-0.0%)
				PsV Neutralization 50% Titer	26.0% (14.6%, 37.4%)	25.8% (14.2%)
				PsV Neutralization 80% Titer	10.3% (1.0%, 19.6%)	18.0% (6.6%)
	Day 57	261		Binding Antibody to RBD	-0.0% (-0.0%, 0.0%)	-0.0% (-0.0%)
				Binding Antibody to Spike	-0.0% (-0.0%, 0.0%)	-0.0% (-0.0%)
				PsV Neutralization 50% Titer	8.1% (1.3%, 14.9%)	13.9% (6.0%)
				PsV Neutralization 80% Titer	-0.9% (-3.7%, 1.9%)	6.2% (1.1%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.

Table 2.44: Table 8j. Differences of responder rates between the vaccine arm and the by Age, Race and ethnic group

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
Age ≥ 65 Communities of Color	Negative	Day 29	253	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
		Day 57	253	PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	57.7%
				Binding Antibody to RBD	(49.0%, 66.5%)
	Positive	Day 29	148	Binding Antibody to Spike	75.2%
				PsV Neutralization 50% Titer	(67.5%, 82.9%)
		Day 57	148	Binding Antibody to RBD	100.0%
				Binding Antibody to Spike	(100.0%, 100.0%)
				PsV Neutralization 50% Titer	94.1%
Age ≥ 65 White Non-Hispanic	Negative	Day 29	227	PsV Neutralization 80% Titer	(89.9%, 98.3%)
				Binding Antibody to RBD	97.0%
		Day 57	148	Binding Antibody to Spike	(93.9%, 100.0%)
				PsV Neutralization 50% Titer	0.0%
				PsV Neutralization 80% Titer	(-0.0%, 0.0%)
	Positive	Day 29	148	Binding Antibody to RBD	0.0%
				Binding Antibody to Spike	(-0.0%, 0.0%)
		Day 57	148	PsV Neutralization 50% Titer	28.2%
				PsV Neutralization 80% Titer	(12.8%, 43.7%)
				Binding Antibody to RBD	11.5%
		Day 57	148	Binding Antibody to Spike	(-1.6%, 24.5%)
				PsV Neutralization 50% Titer	0.0%
				PsV Neutralization 80% Titer	(-0.0%, 0.0%)
	Negative	Day 29	227	Binding Antibody to RBD	0.0%
				Binding Antibody to Spike	(-0.0%, 0.0%)
		Day 57	148	PsV Neutralization 50% Titer	10.2%
				PsV Neutralization 80% Titer	(0.4%, 20.0%)
				Binding Antibody to RBD	-1.6%
		Day 57	148	Binding Antibody to Spike	(-5.4%, 2.1%)
				PsV Neutralization 50% Titer	100.0%
				PsV Neutralization 80% Titer	(100.0%, 100.0%)

Table 2.44: Table 8j. Differences of responder rates between the vaccine arm and the placebo by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
				PsV Neutralization 80% Titer	78.4% (70.6%, 86.2%)	67.4% (58.5%, 76.3%)
	Day 57	227		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.6% (93.1%, 100.0%)	91.4% (86.1%, 96.7%)
	Positive	Day 29	117	Binding Antibody to RBD	0.0% (0.0%, 0.0%)	0.7% (-1.4%, -0.7%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	25.5% (8.3%, 42.7%)	8.3% (-9.8%, 18.1%)
				PsV Neutralization 80% Titer	3.8% (-11.3%, 18.8%)	8.7% (-8.4%, 18.8%)
	Day 57	117		Binding Antibody to RBD	0.0% (0.0%, 0.0%)	0.0% (0.0%, 0.0%)
				Binding Antibody to Spike	0.0% (0.0%, 0.0%)	0.0% (0.0%, 0.0%)
				PsV Neutralization 50% Titer	18.0% (7.7%, 28.3%)	21.2% (8.8%, 28.3%)
				PsV Neutralization 80% Titer	2.7% (-2.5%, 7.9%)	0.5% (-6.6%, 8.4%)
Age $\geq$ 65 Communities of Color	Negative	Day 29	282	Binding Antibody to RBD	100.0%	100.0%
				Binding Antibody to Spike	100.0% (100.0%, 100.0%)	100.0% (100.0%, 100.0%)
				PsV Neutralization 50% Titer	81.7% (75.3%, 88.1%)	71.2% (63.7%, 79.7%)
				PsV Neutralization 80% Titer	92.9% (88.7%, 97.2%)	80.5% (73.9%, 92.9%)
	Day 57	282		Binding Antibody to RBD	100.0% (100.0%, 100.0%)	100.0% (100.0%, 100.0%)
				Binding Antibody to Spike	100.0%	100.0%

Table 2.44: Table 8j. Differences of responder rates between the vaccine arm and the by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	97.1%
					(94.3%, 99.9%)
				PsV Neutralization 80% Titer	97.9%
					(95.6%, 100.3%)
	Positive	Day 29	113	Binding Antibody to RBD	-0.0%
					(-0.0%, 0.0%)
				Binding Antibody to Spike	-0.0%
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	17.6%
					(5.4%, 29.9%)
				PsV Neutralization 80% Titer	6.1%
					(-1.8%, 14.0%)
		Day 57	113	Binding Antibody to RBD	-0.0%
					(-0.0%, 0.0%)
				Binding Antibody to Spike	-0.0%
					(-0.0%, 0.0%)
				PsV Neutralization 50% Titer	-1.0%
					(-5.2%, 3.2%)
				PsV Neutralization 80% Titer	2.6%
					(-1.6%, 6.8%)
Age $i = 65$ White Non-Hispanic	Negative	Day 29	229	Binding Antibody to RBD	100.0%
					(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	85.7%
					(79.0%, 92.3%)
				PsV Neutralization 80% Titer	89.8%
					(84.1%, 95.5%)
		Day 57	229	Binding Antibody to RBD	100.0%
					(100.0%, 100.0%)
				Binding Antibody to Spike	100.0%
					(100.0%, 100.0%)
				PsV Neutralization 50% Titer	96.4%
					(92.9%, 99.9%)
				PsV Neutralization 80% Titer	100.0%
					(100.0%, 100.0%)
	Positive	Day 29	107	Binding Antibody to RBD	-0.0%

Table 2.44: Table 8j. Differences of responder rates between the vaccine arm and the placebo by Age, Race and ethnic group (continued)

Group	Baseline	Visit	N	Endpoint	2-Fold Rise	4-Fold
				Binding Antibody to Spike	(-0.0%, -0.0%) -0.0%	(-0.0% -0.0%)
				PsV Neutralization 50% Titer	(-0.0%, -0.0%) 15.0% (0.0%, 29.9%)	(-0.0% 20.3% (2.3%,
				PsV Neutralization 80% Titer	20.1% (7.0%, 33.2%)	24.4% (9.6%,
Day 57	107			Binding Antibody to RBD	-0.0% (-0.0%, -0.0%)	-0.0% (-0.0%)
				Binding Antibody to Spike	-0.0% (-0.0%, -0.0%)	-0.0% (-0.0%)
				PsV Neutralization 50% Titer	2.1% (-4.2%, 8.4%)	2.5% (-7.0%)
				PsV Neutralization 80% Titer	2.0% (-1.7%, 5.6%)	5.9% (-0.3%)

All calculations were weighted by the inverse probability sampling (IPS), defined based on the subcohort sampling strata.