COMPASS_analysis

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```r
library(dplyr)
pvals<-function(data, column){

    data<-filter(data, SM!="N")
    data$SM<-factor(data$SM, levels=c("X","SM"))
    data$TB<-factor(data$TB, levels=c("HC","LTBI","TB"))

    x<-split(data,data$TB)
    A<-lapply(x, function(g) wilcox.test(g[,column]~g[,"SM"]))

    y<-split(data,data$SM)
    B<-lapply(y, function(g)
        wilcox.test((g[,column]~g[,"TB"]), subset=g$TB %in% c("HC", "LTBI")))
    C<- lapply(y, function(g)
        wilcox.test((g[,column]~g[,"TB"]), subset=g$TB %in% c("LTBI", "TB")))
    D<- lapply(y, function(g)
        wilcox.test((g[,column]~g[,"TB"]), subset=g$TB %in% c("HC", "TB")))

    labels<-c("HC SM+ to HC SM-", "LTBI SM+ to LTBI SM-", "TB SM+ to TB SM-",
             "HC SM+ to LTBI SM+", "LTBI SM+ to TB SM+", "HC SM+ to TB SM+",
             "HC SM- to LTBI SM-", "LTBI SM- to TB SM-", "HC SM- to TB SM-"
    )
    pvals<-c(A$HC$p.value, A$LTBI$p.value, A$TB$p.value,
            B$SM$p.value, C$SM$p.value,  D$SM$p.value,
            B$X$p.value,  C$X$p.value,   D$X$p.value)

    bonf_adj_pvals<-round(p.adjust(pvals, method="bonferroni"), 4)

    fdr_adj_pvals<-round(p.adjust(pvals, method="fdr"), 4)

    table<-(cbind(labels, round(pvals, 4), bonf_adj_pvals, fdr_adj_pvals))
    colnames(table)<-c("Comparison", paste(column,"p-values"," "),
                    "Bonferonni Corrected p-values", "FDR Corrected p-vales")
    table
}
```
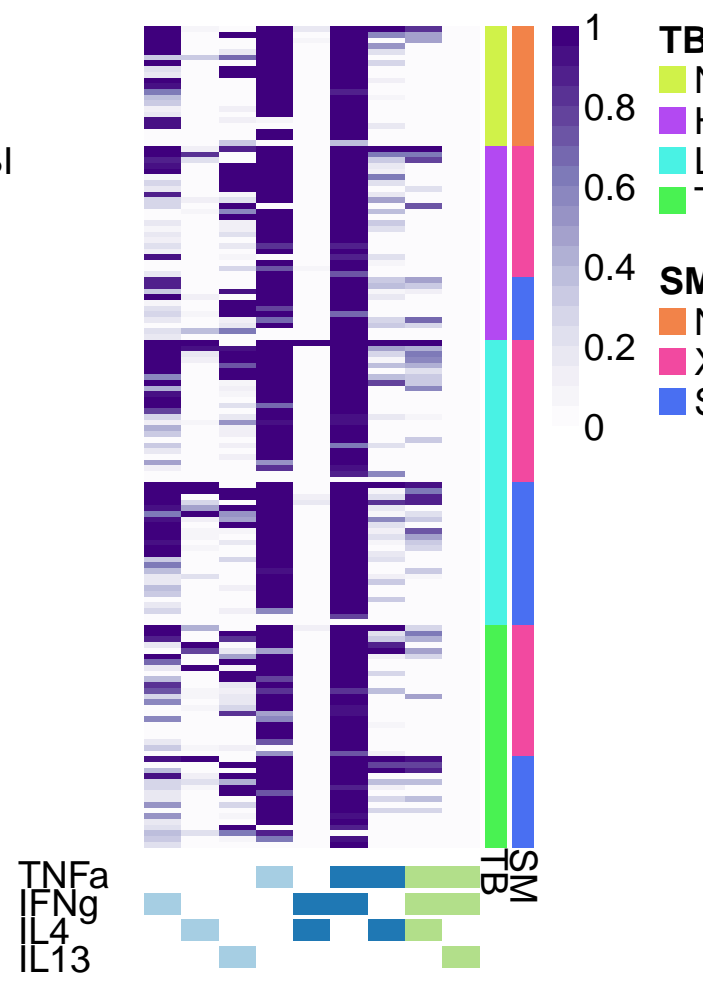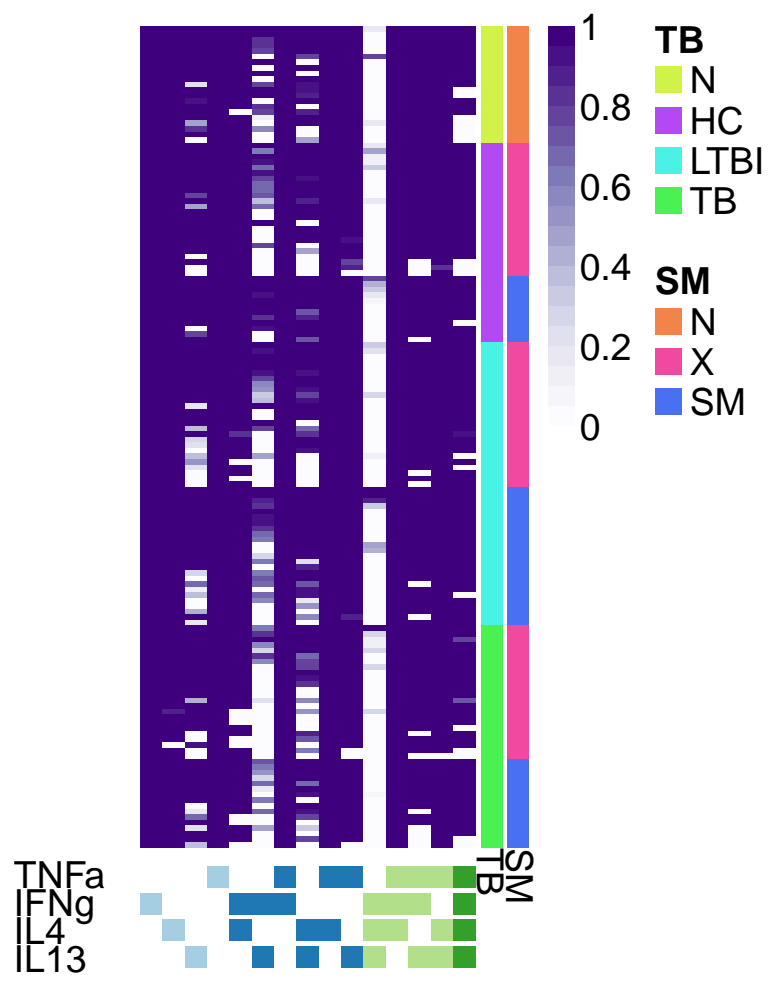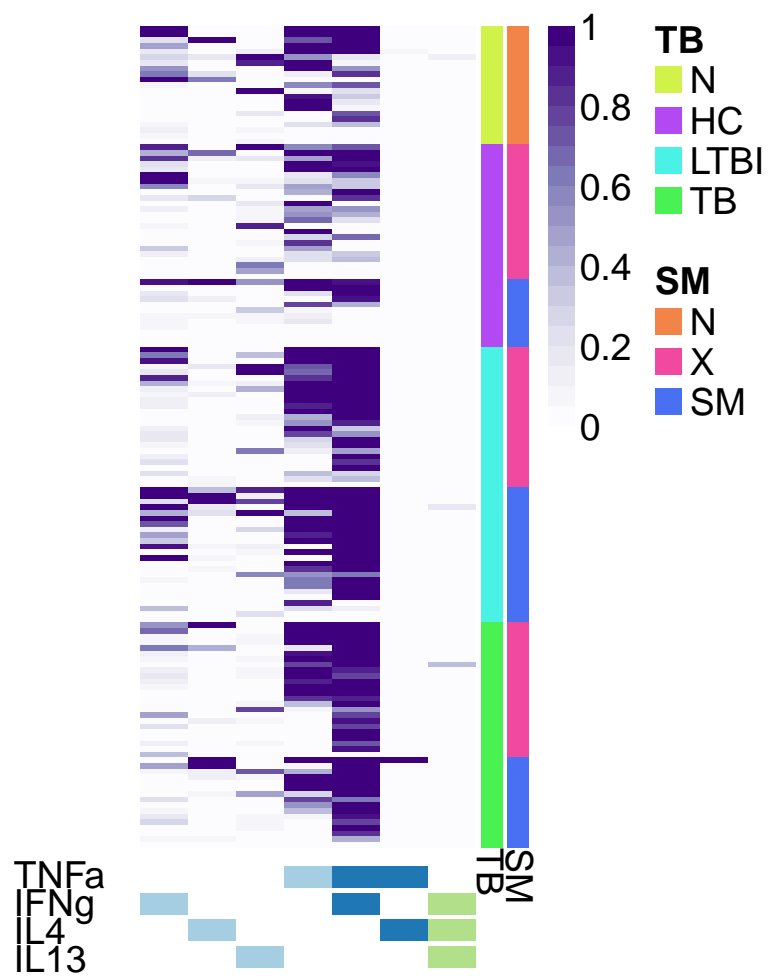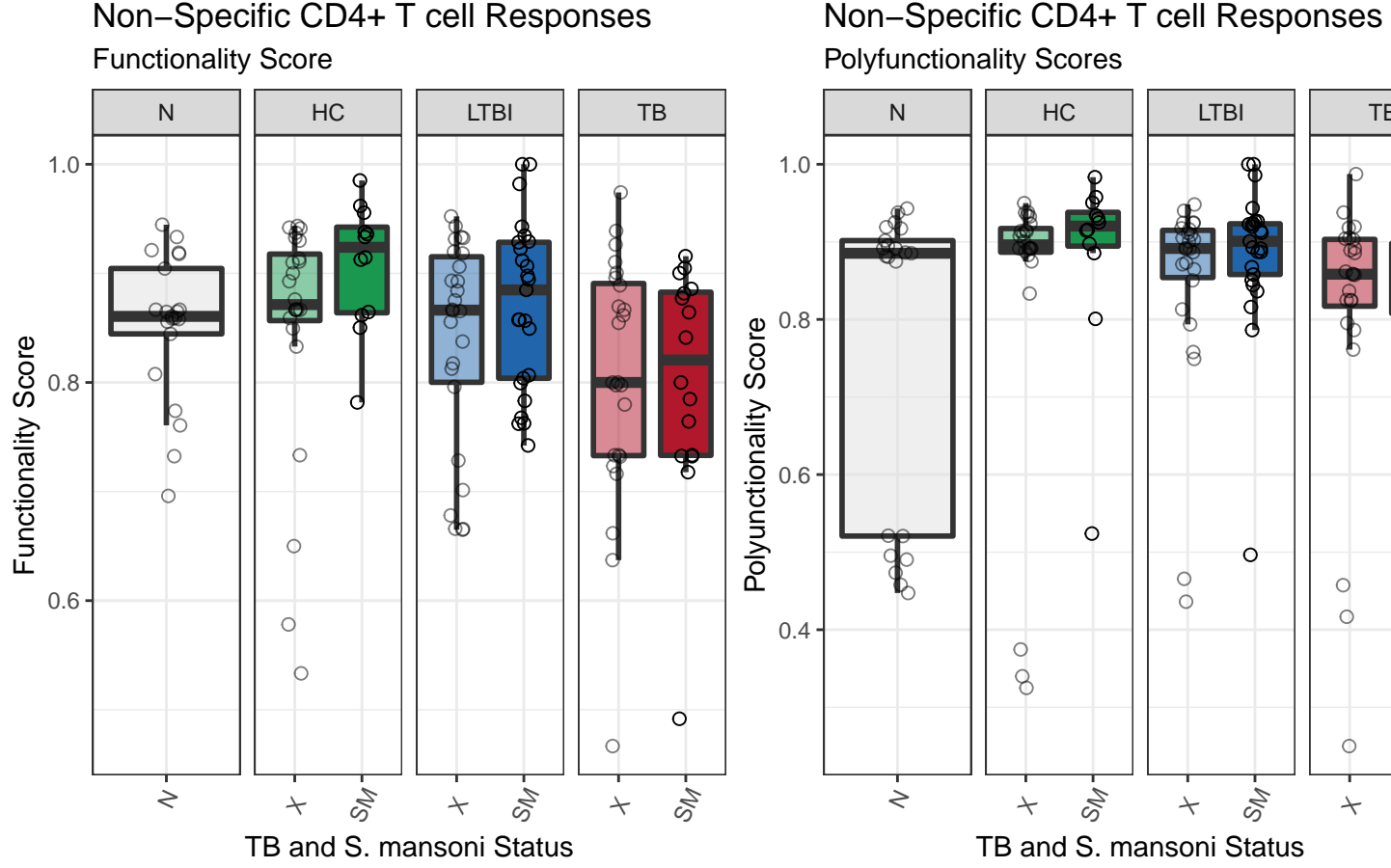
TB
N
HC
LTBI
TB

SM
N
X
SM

TNFa
IFNg
IL4
IL13

TB
SM

Non-Specific CD4+ T cell Responses
Functionality Score

Non-Specific CD4+ T cell Responses
Polyfunctionality Scores

Table 1: Non Specific CD4+ T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1105	0.9943	0.1989
LTBI SM+ to LTBI SM-	0.3739	1	0.4808
TB SM+ to TB SM-	1	1	1
HC SM+ to LTBI SM+	0.109	0.9813	0.1989
LTBI SM+ to TB SM+	0.0282	0.2539	0.127
HC SM+ to TB SM+	0.0022	0.0196	0.0196
HC SM- to LTBI SM-	0.4485	1	0.5045
LTBI SM- to TB SM-	0.2519	1	0.3779
HC SM- to TB SM-	0.0589	0.5305	0.1768

Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1263	1	0.2842
LTBI SM+ to LTBI SM-	0.2813	1	0.4219
TB SM+ to TB SM-	0.9121	1	0.9121
HC SM+ to LTBI SM+	0.3435	1	0.4417
LTBI SM+ to TB SM+	0.0195	0.1759	0.0879
HC SM+ to TB SM+	0.0061	0.0549	0.0549
HC SM- to LTBI SM-	0.4144	1	0.4661
LTBI SM- to TB SM-	0.168	1	0.3023
HC SM- to TB SM-	0.039	0.3512	0.1171

Mtb Whole Cell Lysate Specific CD4+ T cell Functionality Scores

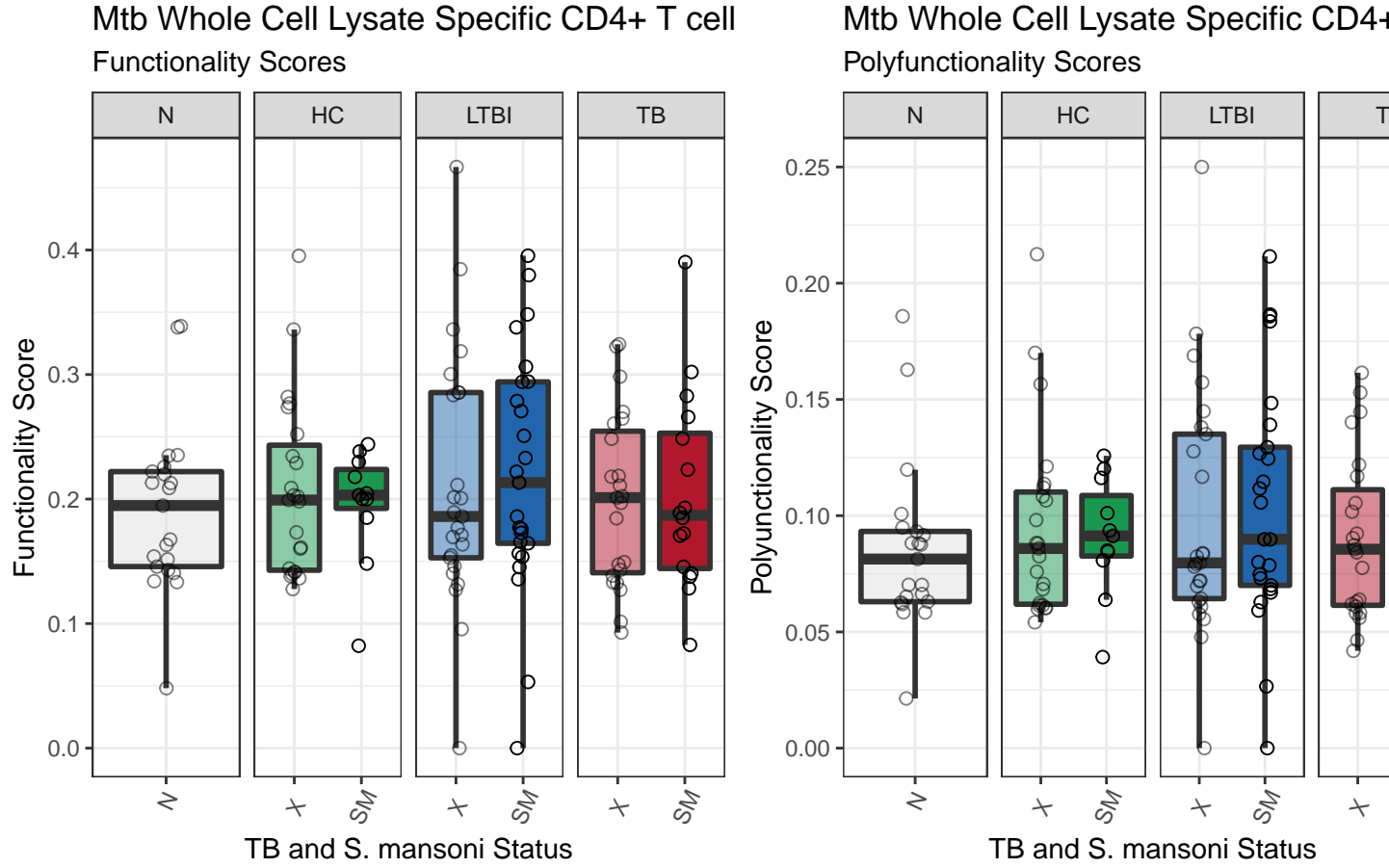## Mtb Whole Cell Lysate Specific CD4+ Polyfunctionality Scores

Table 3: Mtb Whole Cell Lysate Specific CD4+ T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.7998	1	0.9887
LTBI SM+ to LTBI SM-	0.5283	1	0.9887
TB SM+ to TB SM-	0.9887	1	0.9887
HC SM+ to LTBI SM+	0.6116	1	0.9887
LTBI SM+ to TB SM+	0.4668	1	0.9887
HC SM+ to TB SM+	0.716	1	0.9887
HC SM- to LTBI SM-	0.9024	1	0.9887
LTBI SM- to TB SM-	0.7904	1	0.9887
HC SM- to TB SM-	0.7441	1	0.9887

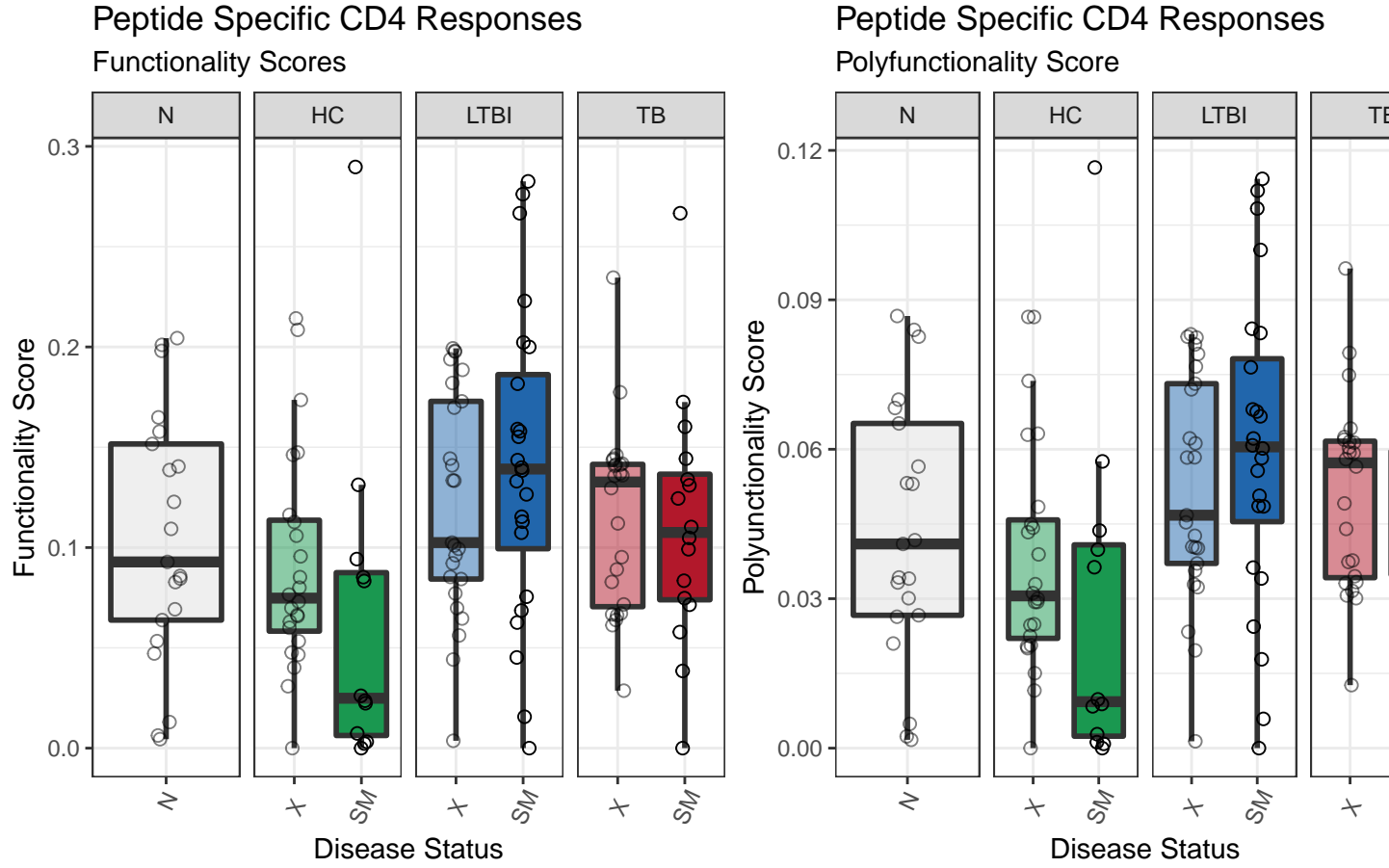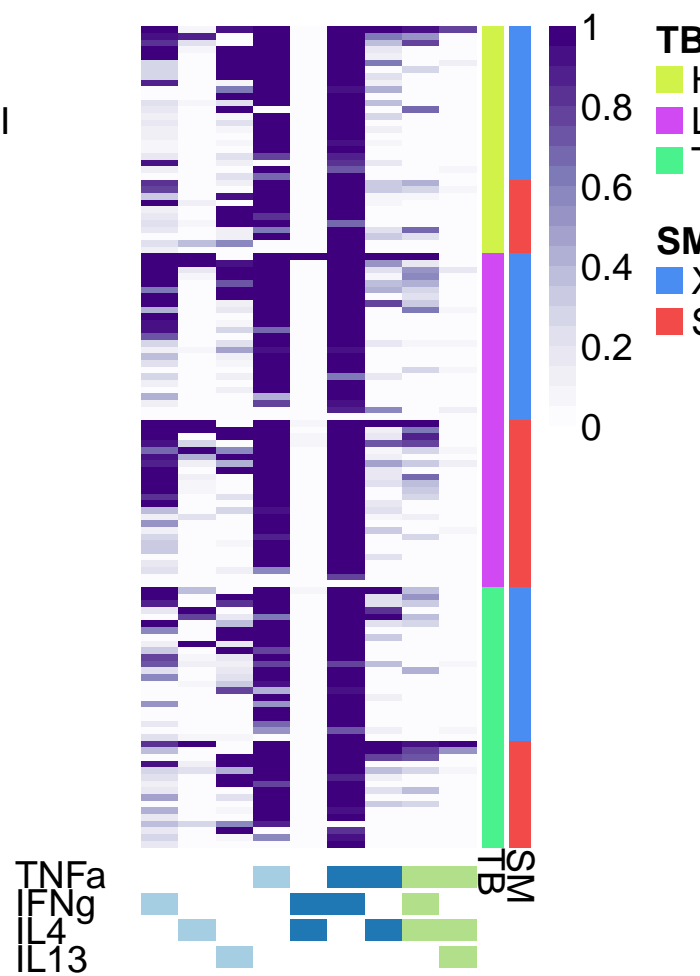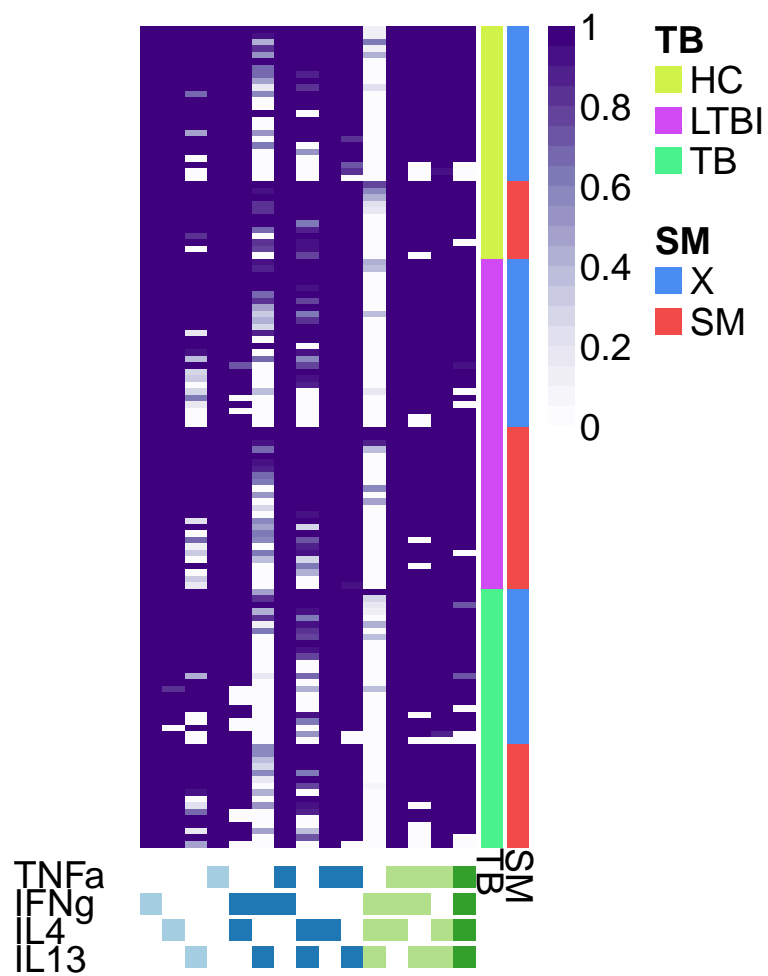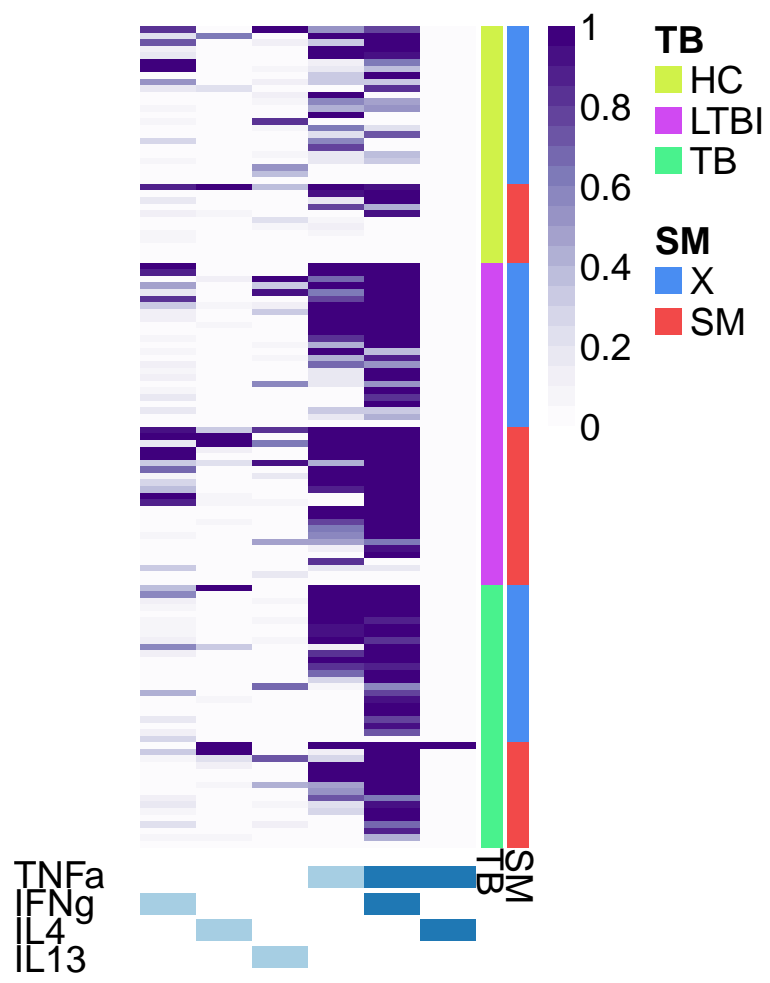| Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.6373	1	0.9024
LTBI SM+ to LTBI SM-	0.5283	1	0.9024
TB SM+ to TB SM-	0.8324	1	0.9024
HC SM+ to LTBI SM+	0.7352	1	0.9024
LTBI SM+ to TB SM+	0.4832	1	0.9024
HC SM+ to TB SM+	0.716	1	0.9024
HC SM- to LTBI SM-	0.9024	1	0.9024
LTBI SM- to TB SM-	0.7747	1	0.9024
HC SM- to TB SM-	0.7441	1	0.9024

Table 5: Mtb Peptide Specific CD4 T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.087	0.7828	0.1566
LTBI SM+ to LTBI SM-	0.3661	1	0.4707
TB SM+ to TB SM-	0.6722	1	0.6722
HC SM+ to LTBI SM+	0.0059	0.0533	0.0533
LTBI SM+ to TB SM+	0.1591	1	0.2387
HC SM+ to TB SM+	0.0367	0.3301	0.1446
HC SM- to LTBI SM-	0.0482	0.4338	0.1446
LTBI SM- to TB SM-	0.6271	1	0.6722
HC SM- to TB SM-	0.0852	0.7664	0.1566

Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1001	0.9006	0.1801
LTBI SM+ to LTBI SM-	0.3556	1	0.4572
TB SM+ to TB SM-	0.6524	1	0.7138
HC SM+ to LTBI SM+	0.0059	0.0533	0.0533
LTBI SM+ to TB SM+	0.1851	1	0.2776
HC SM+ to TB SM+	0.0327	0.2943	0.0736
HC SM- to LTBI SM-	0.0271	0.2439	0.0736
LTBI SM- to TB SM-	0.7138	1	0.7138
HC SM- to TB SM-	0.0172	0.1551	0.0736

Non–Specific CD4+ T cell Responses
Functionality Score
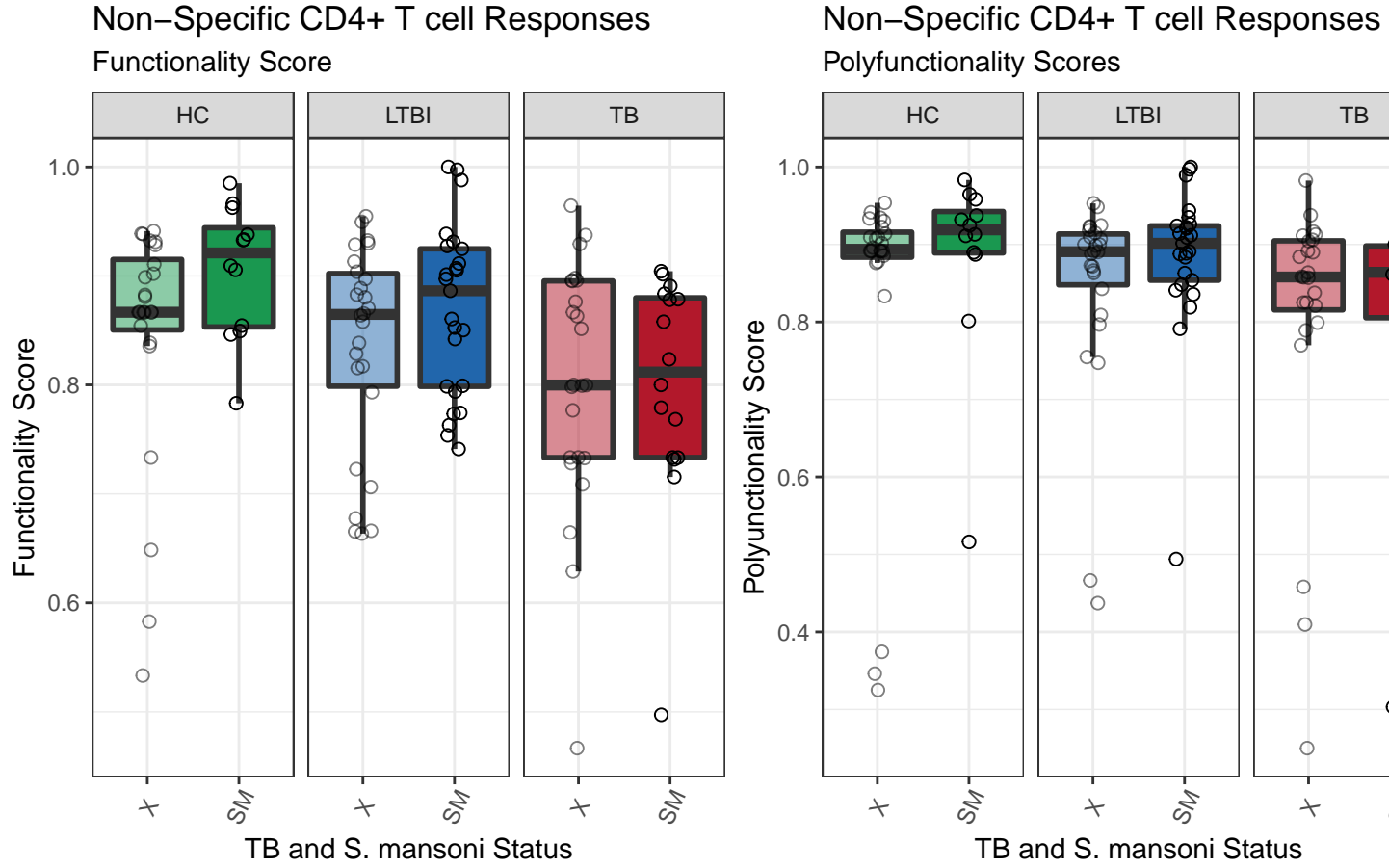
Non–Specific CD4+ T cell Responses
Polyfunctionality Scores

Table 7: Non-Specific CD4+ T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1105	0.9943	0.2486
LTBI SM+ to LTBI SM-	0.3255	1	0.4201
TB SM+ to TB SM-	0.956	1	0.956
HC SM+ to LTBI SM+	0.1415	1	0.2548
LTBI SM+ to TB SM+	0.0211	0.1896	0.0948
HC SM+ to TB SM+	0.0015	0.0135	0.0135
HC SM- to LTBI SM-	0.4545	1	0.5113
LTBI SM- to TB SM-	0.3268	1	0.4201
HC SM- to TB SM-	0.0759	0.6828	0.2276

Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1533	1	0.3449
LTBI SM+ to LTBI SM-	0.3073	1	0.4357
TB SM+ to TB SM-	0.8144	1	0.8144
HC SM+ to LTBI SM+	0.3775	1	0.4357
LTBI SM+ to TB SM+	0.0244	0.2198	0.1099
HC SM+ to TB SM+	0.0083	0.0751	0.0751
HC SM- to LTBI SM-	0.3873	1	0.4357
LTBI SM- to TB SM-	0.2034	1	0.3661
HC SM- to TB SM-	0.0499	0.4491	0.1497

Mtb Whole Cell Lysate Specific CD4+ T cell Functionality Scores

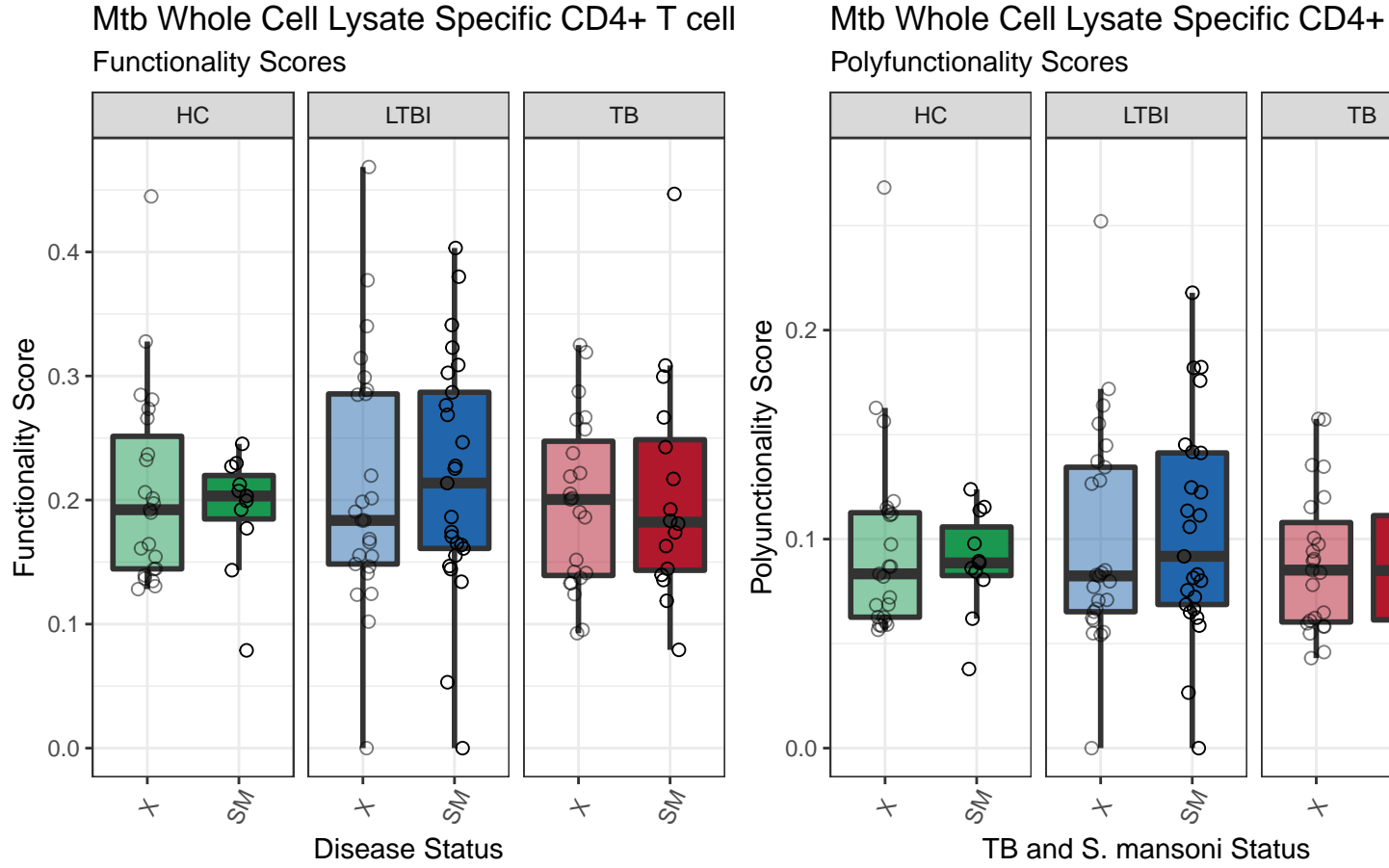## Mtb Whole Cell Lysate Specific CD4+ Polyfunctionality Scores

Table 9: Mtb Whole Cell Lysate Specific CD4+ T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.8848	1	0.9887
LTBI SM+ to LTBI SM-	0.5803	1	0.9887
TB SM+ to TB SM-	0.9887	1	0.9887
HC SM+ to LTBI SM+	0.5648	1	0.9887
LTBI SM+ to TB SM+	0.4832	1	0.9887
HC SM+ to TB SM+	0.7897	1	0.9887
HC SM- to LTBI SM-	0.8062	1	0.9887
LTBI SM- to TB SM-	0.7435	1	0.9887
HC SM- to TB SM-	0.7441	1	0.9887

Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.6635	1	0.9214
LTBI SM+ to LTBI SM-	0.554	1	0.9214
TB SM+ to TB SM-	0.9214	1	0.9214
HC SM+ to LTBI SM+	0.6847	1	0.9214
LTBI SM+ to TB SM+	0.5169	1	0.9214
HC SM+ to TB SM+	0.8653	1	0.9214
HC SM- to LTBI SM-	0.9024	1	0.9214
LTBI SM- to TB SM-	0.6976	1	0.9214
HC SM- to TB SM-	0.7607	1	0.9214

Peptide Specific CD4+ T cell Responses
Functionality Scores
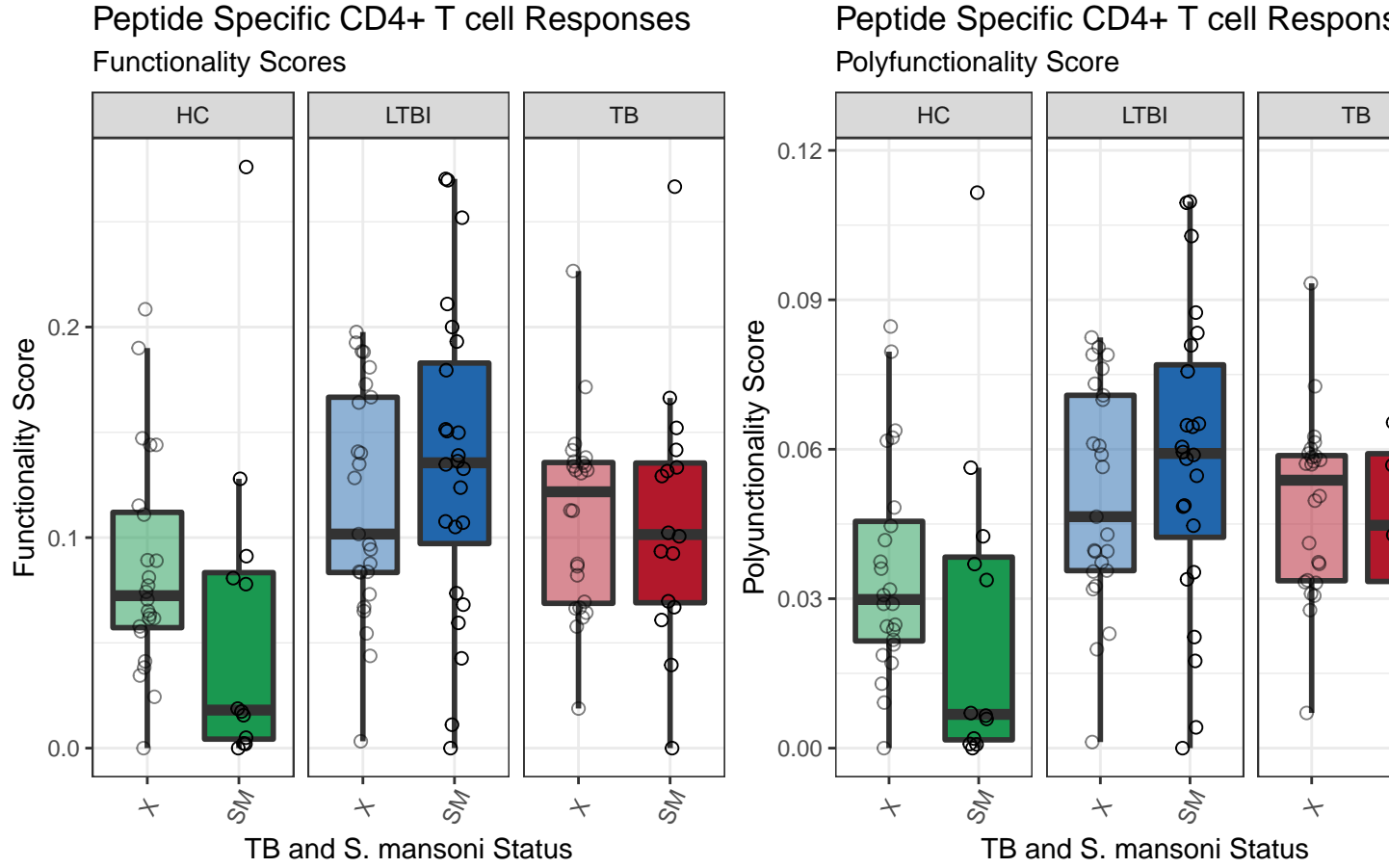
Peptide Specific CD4+ T cell Responses
Polyfunctionality Score

Table 11: Mtb Peptide Specific CD4+ T cell Responses

Comparison	FS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1001	0.9008	0.1802
LTBI SM+ to LTBI SM-	0.3661	1	0.4707
TB SM+ to TB SM-	0.8593	1	0.8593
HC SM+ to LTBI SM+	0.0059	0.0533	0.0533
LTBI SM+ to TB SM+	0.1591	1	0.2387
HC SM+ to TB SM+	0.0229	0.2061	0.0873
HC SM- to LTBI SM-	0.0291	0.2619	0.0873
LTBI SM- to TB SM-	0.5063	1	0.5695
HC SM- to TB SM-	0.0646	0.5815	0.1454

Comparison	PFS p-values	Bonferonni Corrected p-values	FDR Corrected p-vales
HC SM+ to HC SM-	0.1072	0.9649	0.193
LTBI SM+ to LTBI SM-	0.3987	1	0.5126
TB SM+ to TB SM-	0.8593	1	0.8593
HC SM+ to LTBI SM+	0.0048	0.0434	0.0434
LTBI SM+ to TB SM+	0.1944	1	0.2916
HC SM+ to TB SM+	0.0179	0.161	0.0462
HC SM- to LTBI SM-	0.015	0.135	0.0462
LTBI SM- to TB SM-	0.5452	1	0.6133
HC SM- to TB SM-	0.0205	0.1846	0.0462