









Summary table of P-values for PCs before batch correction

```
P_Plate P_Slide P_Array P_DEX P_Sex PC1.Pr..F. 0.54207 0.94143 0.73818 0.06788 0.21251 PC2.Pr..F. 0.00000 0.00000 0.00000 0.84504 0.46059 PC3.Pr..F. 0.00000 0.00000 0.00001 0.75903 0.91300 PC4.Pr..F. 0.97917 0.00001 0.00147 0.97509 0.17027 PC5.Pr..F. 0.00000 0.00000 0.16026 0.92386 0.10236 PC6.Pr..F. 0.00014 0.00000 0.07470 0.92649 0.26453
```

ANOVA results for Plate before batch correction

```
SPC1
Analysis of Variance Table
Response: pc
                      Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Plate 4 203341 50835 0.7748 0.5421
                    398 26113161 65611
Residuals
Analysis of Variance Table
Response: pc
                      Df Sum Sq Mean Sq F value
Prin.comp$Sample_Plate 4 1844092 461023 12.954 6.327e-10 ***
                    398 14163944 35588
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 0.1 ... 1
$PC3
Analysis of Variance Table
Response: pc
                     Df Sum Sq Mean Sq F value
Prin.comp$Sample_Plate 4 770089 192522 11.444 8.398e-09 ***
                    398 6695598 16823
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
Analysis of Variance Table
Response: pc
                     Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample Plate 4 7546 1886.6 0.1095 0.9792
                    398 6856884 17228.4
Residuals
SPC5
Analysis of Variance Table
Response: pc
                      Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Plate 4 452102 113026 13.021 5.647e-10 ***
Residuals
                    398 3454663 8680
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
$PC6
Analysis of Variance Table
Response: pc
                     Df Sum Sq Mean Sq F value
Drin comp$9ample Dlate 4 197778 49445 5 8353 0 0001428 ***
```

ANOVA results for Slide before batch correction

```
SPC1
Analysis of Variance Table
Response: pc
                                        Df Sum Sq Mean Sq F value Pr(>F)
as.factor(as.character(Prin.comp$Slide)) 50 2366031 47321 0.6955 0.9414
                                       352 23950471 68041
Residuals
Analysis of Variance Table
Response: pc
                                        Df Sum Sq Mean Sq F value
as.factor(as.character(Prin.comp$Slide)) 50 7440619 148812 6.1141 < 2.2e-16
                                       352 8567416 24339
Residuals
as.factor(as.character(Prin.comp$Slide)) ***
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 0.1 ... 1
Analysis of Variance Table
Response: pc
                                       Df Sum Sq Mean Sq F value
as.factor(as.character(Prin.comp$Slide)) 50 4799877 95998 12.676 < 2.2e-16
Residuals
                                       352 2665809 7573
as.factor(as.character(Prin.comp$Slide)) ***
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
Analysis of Variance Table
Response: pc
                                       Df Sum Sq Mean Sq F value
as.factor(as.character(Prin.comp$Slide)) 50 1691450 33829 2.3019 6.411e-06
Residuals
                                       352 5172980 14696
as.factor(as.character(Prin.comp$Slide)) ***
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
Analysis of Variance Table
Response: pc
                                        Df Giim Ga Mean Ga F traline
                                                                  Dr/5F1
```

ANOVA results for Array before batch correction

```
SPC1
Analysis of Variance Table
Response: pc
               Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Array 7 286711 40959 0.6215 0.7382
            395 26029791 65898
Residuals
Analysis of Variance Table
Response: pc
               Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Array 7 2393835 341976 9.922 2.004e-11 ***
              395 13614200 34466
Residuals
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 0.1 ... 1
$PC3
Analysis of Variance Table
Response: pc
               Df Sum Sq Mean Sq F value
Prin.comp$Array 7 631113 90159 5.2107 1.068e-05 ***
Residuals 395 6834573 17303
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
Analysis of Variance Table
Response: pc
              Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Array 7 391861 55980 3.4163 0.001473 **
Residuals 395 6472569 16386
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 1
SPC5
Analysis of Variance Table
Response: pc
              Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Array 7 102178 14596.8 1.5155 0.1603
Residuals
          395 3804588 9631.9
$PC6
Analysis of Variance Table
Response: pc
              Df Sum Sq Mean Sq F value Pr(>F)
Drin comp¢array 7 113967 16281 0 1 8607 0 0747
```

ANOVA results for Sample Group before batch correction

```
SPC1
Analysis of Variance Table
Response: pc
                   Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Group 1 218130 218130 3.3516 0.06788 .
Residuals 401 26098372 65083
Signif. codes: 0 ...***... 0.001 ...**... 0.01 ...*... 0.05 ...... 0.1 ... 1
SPC2
Analysis of Variance Table
Response: pc
                    Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample Group 1 1527 1527 0.0383 0.845
Residuals 401 16006508 39916
$PC3
Analysis of Variance Table
Response: pc
                   Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Group 1 1754 1753.9 0.0942 0.759
Residuals 401 7463933 18613.3
SPC4
Analysis of Variance Table
Response: pc
                   Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Group 1 17 16.7 0.001 0.9751
Residuals 401 6864414 17118.2
Analysis of Variance Table
Response: pc
                   Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Group 1 89 89.1 0.0091 0.9239
Residuals 401 3906676 9742.3
$PC6
Analysis of Variance Table
Response: pc
                    Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$Sample_Group 1 76 75.9 0.0085 0.9265
                  401 3570107 8903.0
Residuals
```

ANOVA results for Sex before batch correction

```
SPC1
Analysis of Variance Table
Response: pc
            Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 101929 101929 1.5592 0.2125
Residuals 401 26214573 65373
Analysis of Variance Table
Response: pc
        Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 21748 21748 0.5455 0.4606
Residuals 401 15986288 39866
SPC3
Analysis of Variance Table
Response: pc
            Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 223 222.5 0.012 0.913
Residuals 401 7465464 18617.1
SPC4
Analysis of Variance Table
Response: pc
            Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 32156 32156 1.8873 0.1703
Residuals 401 6832274 17038
SPC5
Analysis of Variance Table
Response: pc
    Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 25943 25943.5 2.6807 0.1024
Residuals 401 3880822 9677.9
SPC6
Analysis of Variance Table
Response: pc
            Df Sum Sq Mean Sq F value Pr(>F)
Prin.comp$sex 1 11080 11080.3 1.2484 0.2645
Residuals 401 3559103 8875.6
```