Repeat Measures PERMANOVA

Luminal

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

                Df SumsOfSqs MeanSqs F.Model      R2      Pr(>F)
Sequencing_Run  1    10.802 10.8021  6.8554 0.09650      0.2821
Sex             1     1.308  1.3080  0.8301 0.01168      0.8505
Site_General    1    25.777 25.7767 16.3589 0.23026 0.00009999 ***
Residuals       47    74.058  1.5757         0.66156      0.0120 *
Total           50   111.945                 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Mucosal

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

                Df SumsOfSqs MeanSqs F.Model      R2      Pr(>F)
Sequencing_Run  2    23.824 11.9119  8.5089 0.24401     0.05999 .
Sex             1     1.131  1.1311  0.8080 0.01159     0.80992
Site_General    1    16.682 16.6823 11.9164 0.17086 0.00009999 ***
Residuals       40    55.998  1.3999         0.57354     0.00160 **
Total           44    97.635                 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Mucosal SI

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)
```

```
                   Df SumsOfSqs MeanSqs F.Model      R2 Pr(>F)
Sequencing_Run   2   15.472  7.7359   4.8610 0.37477 0.1897
Sex              1    3.025  3.0249   1.9008 0.07327 0.7294
Site             2    2.098  1.0491   0.6592 0.05082 0.3012
Residuals       13   20.689  1.5914          0.50113 0.2688
Total           18   41.284                  1.00000
```

Mucosal Colon

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

                   Df SumsOfSqs MeanSqs F.Model      R2  Pr(>F)
Sequencing_Run   2   19.870  9.9348   6.4664 0.37094 0.09949 .
Sex              1    2.513  2.5129   1.6356 0.04691 0.68693
Site             2    0.455  0.2277   0.1482 0.00850 0.79342
Residuals       20   30.728  1.5364          0.57365 0.26197
Total           25   53.566                  1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Luminal SI

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

                   Df SumsOfSqs MeanSqs F.Model      R2 Pr(>F)
Sequencing_Run   1    0.691  0.6913 0.31271 0.01319 0.8885
Sex              1    4.627  4.6269 2.09301 0.08826 0.3039
Site             2    5.103  2.5514 1.15415 0.09734 0.2300
Residuals       19   42.002  2.2106          0.80121 0.5154
Total           23   52.423                  1.00000
```

Luminal Colon

```
Permutation: free
Number of permutations: 0
```

```
Terms added sequentially (first to last)

             Df SumsOfSqs MeanSqs F.Model      R2  Pr(>F)
Sequencing_Run  1     7.125  7.1251  3.7746 0.12978 0.41696
Sex             1     4.532  4.5320  2.4009 0.08255 0.50775
Site            2     1.714  0.8570  0.4540 0.03122 0.08149 .
Residuals      22    41.528  1.8876         0.75644 0.44096
Total          26    54.899                 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Colon

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

             Df SumsOfSqs MeanSqs F.Model      R2      Pr(>F)
Sequencing_Run  1    17.257 17.2567 11.6759 0.15858    0.21628
Sex             1     6.714  6.7137  4.5425 0.06170    0.52385
Site            2     4.317  2.1583  1.4603 0.03967    0.04010 *
Type            1    11.066 11.0657  7.4871 0.10169 0.00009999 ***
Residuals      47    69.465  1.4780         0.63836    0.05999 .
Total          52   108.818                 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Permutation: free
Number of permutations: 0

Terms added sequentially (first to last)

             Df SumsOfSqs MeanSqs F.Model      R2  Pr(>F)
Sequencing_Run  1     4.422  4.4219  2.2749 0.04691 0.4399
Sex             1     6.607  6.6073  3.3992 0.07010 0.3579
Site            2     5.721  2.8605  1.4717 0.06070 0.1221
Type            1     5.586  5.5861  2.8739 0.05927 0.0176 *
Residuals      37    71.919  1.9437         0.76302 0.1548
Total          42    94.255                 1.00000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```