

Supplementary Table S8. ICU-COV(+) across time (Tracheal Aspirates) (MaAsLin2 test)

| feature                                                                                                                    | metadata  | value    | coef       | stderr     | N  | N.not.0 | pval       | qval       |
|----------------------------------------------------------------------------------------------------------------------------|-----------|----------|------------|------------|----|---------|------------|------------|
| k_Bacteria_p__Proteobacteria.c__Gammaproteobacteria.o__Pseudomonadales.f__Pseudomonadaceae.g__Pseudomonas...               | TimePoint | Baseline | -3.8877909 | 1.12586357 | 46 | 20      | 0.0012565  | 0.02177932 |
| k_Bacteria_p__Firmicutes.c__Bacilli.o__Lactobacillales.f__Aerococcaceae.g__Abiotrophia...                                  | TimePoint | Baseline | 1.47125985 | 0.49436798 | 46 | 11      | 0.00477779 | 0.04968902 |
| k_Bacteria_p__Firmicutes.c__Bacilli.o__Lactobacillales.f__Carnobacteriaceae.g__Granulicatella...                           | TimePoint | Baseline | 1.94222193 | 0.51506545 | 46 | 14      | 0.00049194 | 0.01023231 |
| k_Bacteria_p__Fusobacteria.c__Fusobacteriia.o__Fusobacteriales.f__Leptotrichiaceae.g__Leptotrichia...                      | TimePoint | Baseline | 2.04415406 | 0.61197858 | 46 | 13      | 0.00173826 | 0.02285364 |
| k_Bacteria_p__Proteobacteria.c__Gammaproteobacteria.o__Pasteurellales.f__Pasteurellaceae.g__Haemophilus.s__parainfluenzae. | TimePoint | Baseline | 2.1540848  | 0.64565417 | 46 | 15      | 0.00175797 | 0.02285364 |
| k_Bacteria_p__Fusobacteria.c__Fusobacteriia.o__Fusobacteriales.f__Fusobacteriaceae.g__Fusobacterium...                     | TimePoint | Baseline | 2.90323401 | 0.94010412 | 46 | 23      | 0.00352083 | 0.04068518 |
| k_Bacteria_p__Actinobacteria.c__Actinobacteria.o__Actinomycetales.f__Actinomycetaceae.g__Actinomyces...                    | TimePoint | Baseline | 4.03835563 | 0.7826147  | 46 | 22      | 5.98E-06   | 0.0002074  |
| k_Bacteria_p__Proteobacteria.c__Betaproteobacteria.o__Neisseriales.f__Neisseriaceae.g__Neisseria...                        | TimePoint | Baseline | 4.36140321 | 1.07057155 | 46 | 16      | 0.00019513 | 0.00507346 |
| k_Bacteria_p__Actinobacteria.c__Actinobacteria.o__Actinomycetales.f__Micrococcaceae.g__Rothia.s__mucilaginos.              | TimePoint | Baseline | 4.98766797 | 0.8659389  | 46 | 21      | 8.16E-07   | 4.25E-05   |
| k_Bacteria_p__Firmicutes.c__Bacilli.o__Lactobacillales.f__Streptococcaceae.g__Streptococcus...                             | TimePoint | Baseline | 5.53557293 | 0.90843475 | 46 | 28      | 2.67E-07   | 2.78E-05   |