

# COVID-19

(n = 30)

early / late  
mild / severe

# Control

(n = 15)

OP  
swab



TB  
secretion



stool



urine



plasma



PBMC



Metagenomics  
(94 samples)

Metagenomics  
(18 samples)

Metagenomics  
(81 samples)

Metabolomics  
(77 samples)

Metabolomics  
(96 samples)

scRNA-seq  
(25 samples)

IFNs  
qRT-PCR  
(94 samples)

Multiplex  
ELISA  
(92 samples)

- Gut microbiome
- Host immune response
- Plasma metabolome

Direction of  
Spearman coefficient  
neg. pos.

Magnitude of  
Spearman coefficient  
0.3 0.4 0.5  
0.6 0.7 0.8

