

Dataset Characteristics Comparison

Characteristic	GSE201530 (Our Study)	GSE163151 (Validation)
Total Samples	55	404
COVID-19 Samples	47	145
Control Samples	8	31
Tissue Source	Peripheral Blood	Blood + NP Swab
Platform	Illumina RNA-seq	Illumina NovaSeq 6000
SARS-CoV-2 Variant	Omicron	Multiple (pre-Omicron)
Study Year	2022	2020
Usage	Training + Analysis	External Validation