

Downregulated: NM_004233(CD83), NM_014143(CD274)

The most significant down-expressed genes are NM_004233(CD83) and NM_014143(CD274). CD83 belongs to the immunoglobulin superfamily and is related to the regulation of antigen presentation. CD274 encodes an immune inhibitory receptor ligand that is involved in inhibiting T-cell activation and cytokine production. The down-expressed of these two genes suggests that COVID-19 is likely to infect immune regulations and responses. The down-expressed CD83 and CD274 indicate that COVID-19 potentially inhibits antigen presentation and T-cell activation the body, which are important processes for an effective immune response against pathogens and lead to the regulation expression of the immune system.

Upregulated: NR_111970(CCL4L2), NM_001374337(NT5C3A)

The two most significantly up-expressed genes in the data are NR_111970(CCL4L2) and NM_001374337(NT5C3A), and both of them function in inflammatory and immunoregulatory processes. CCL4L2 is a cytokine gene that binds to the CCR5 receptor to inhibit the entry of disease. NT5C3A is a genes that catalyze the dephosphorylation of pyrimidine 5'-monophosphates. The up-expressed two genes suggest that COVID-19 targets host inflammatory and immunoregulatory processes, and COVID-19 might share a similar pathway with HIV. This causes the up-express of CCL4L2 in response to the presence of COVID-19. Also, the up-expressed gene NT5C3A suggests that COVID-19 might target the production of nucleosides and cellular signaling pathways related to the release of the phosphate groups.