



COVID-19 is an emerging, rapidly evolving situation.
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Get the latest research from NIH: <https://www.nih.gov/coronavirus>.

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Series GSE152418

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Status	Public on Jul 31, 2020
Title	Systems biological assessment of immunity to severe and mild COVID-19 infections
Organism	Homo sapiens
Experiment type	Expression profiling by high throughput sequencing
Summary	The recent emergence of COVID-19 presents a major global crisis. Profound knowledge gaps remain about the interaction between the virus and the immune system. Here, we used a systems biology approach to analyze immune responses in 76 COVID-19 patients and 69 age and sex- matched controls, from Hong Kong and Atlanta. Mass cytometry revealed prolonged plasmablast and effector T cell responses, reduced myeloid expression of HLA-DR and inhibition of mTOR signaling in plasmacytoid DCs (pDCs) during infection. Production of pro-inflammatory cytokines plasma levels of inflammatory mediators, including EN-RAGE, TNFSF14, and Oncostatin-M, which correlated with disease severity, and increased bacterial DNA and endotoxin in plasma in and reduced HLA-DR and CD86 but enhanced EN-RAGE expression in myeloid cells in severe transient expression of IFN stimulated genes in moderate infections, consistent with transcriptomic analysis of bulk PBMCs, that correlated with transient and low levels of plasma COVID-19.
Overall design	RNAseq analysis of PBMCs in a group of 17 COVID-19 subjects and 17 healthy controls
Contributor(s)	Arunachalam PS , Wimmers F , Mok CK , Perera M , Scott M , Hagan T , Sigal N , Feng Y , Bristow L , Tsang OT , Wagh D , Coller J , Pellegrini KL , Kazmin D , Alaaeddine G , Leung WS , Chan JM , Chik TS , Choi CY , Huerta C , McCullough MP , Lv H , Anderson E , Edupuganti S , Upadhyay AA , Bosinger SE , Maecker HT , Khatri P , Rouphael N , Peiris M , Pulendran B
Citation missing	<i>Has this study been published? Please login to update or notify GEO.</i>
Submission date	Jun 13, 2020
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Platforms (1) [GPL24676](#) Illumina NovaSeq 6000 (Homo sapiens)

Samples (34) [GSM4614985](#) S145_nCOV001_C
[More...](#) [GSM4614986](#) S147_nCoV001EUHM-Draw-1
[GSM4614987](#) S149_nCoV002EUHM-Draw-2

Relations

BioProject [PRJNA639275](#)
 SRA [SRP267176](#)

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Format

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Supplementary file	Size	Download	File type/resource
GSE152418_p20047_Study1_RawCounts.txt.gz SRA Run Selector ?	1.6 Mb	(ftp) (http)	TXT

Raw data are available in SRA

Processed data are available on Series record