

## Publication

### A modular framework for the development of targeted Covid-19 blood transcript profiling panels

#### JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

**ID** 4603419

**Author(s)** Rinchai, Darawan; Syed Ahamed Kabeer, Basirudeen; Toufiq, Mohammed; Tatari-Calderone, Zohreh; Deola, Sara; Brummaier, Tobias; Garand, Mathieu; Branco, Ricardo; Baldwin, Nicole; Alfaki, Mohamed; Altman, Matthew C.; Ballestrero, Alberto; Bassetti, Matteo; Zoppoli, Gabriele; De Maria, Andrea; Tang, Benjamin; Bedognetti, Davide; Chaussabel, Damien

**Author(s) at UniBasel** [Brummaier, Tobias](#) ;

**Year** 2020

**Title** A modular framework for the development of targeted Covid-19 blood transcript profiling panels

**Journal** Journal of translational medicine

**Volume** 18

**Number** 1

**Pages / Article-Number** 291

**Keywords** Blood transcriptomics; Covid-19; Immune monitoring; SARS-CoV-2

**Mesh terms** Adult; Antibodies, Viral, blood; Betacoronavirus; Coronavirus Infections, blood, diagnosis, immunology; Gene Expression Profiling; Humans; Immune System; Internet; Pandemics; Pneumonia, Viral, blood, diagnosis, immunology; RNA-Seq; Software; Transcriptome

Covid-19 morbidity and mortality are associated with a dysregulated immune response. Tools are needed to enhance existing immune profiling capabilities in affected patients. Here we aimed to develop an approach to support the design of targeted blood transcriptome panels for profiling the immune response to SARS-CoV-2 infection.; We designed a pool of candidates based on a pre-existing and well-characterized repertoire of blood transcriptional modules. Available Covid-19 blood transcriptome data was also used to guide this process. Further selection steps relied on expert curation. Additionally, we developed several custom web applications to support the evaluation of candidates.; As a proof of principle, we designed three targeted blood transcript panels, each with a different translational connotation: immunological relevance, therapeutic development relevance and SARS biology relevance.; Altogether the work presented here may contribute to the future expansion of immune profiling capabilities via targeted profiling of blood transcript abundance in Covid-19 patients.

**ISSN/ISBN** 1479-5876

**edoc-URL** <https://edoc.unibas.ch/78499/>

**Full Text on edoc** Available;

**Digital Object Identifier DOI** 10.1186/s12967-020-02456-z

**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/32736569>

**ISI-Number** WOS:000559754000001

**Document type (ISI)** Journal Article