



# ProFabSARS

Finding a drug against COVID-19 is a race against time, but a therapy might be closer than you think: Antibodies could easily find and neutralize SARS-CoV-2 once they are available for passive immunization. The Prokaryote-based Fab Selection And Recombinant production Strategy (Pro-FabSARS) is an animal-free and efficient tool mimicking the adaptive human immune system to develop such effective anti-SARS-CoV-2 antibodies.

## BACKGROUND

Antibodies are designed as our bodies' most effective weapon against viral infections, but to identify the right ones and to recombinantly produce them is usually complex, time-consuming and expensive. Common approaches such as *in vitro* phage display have their drawbacks and even if antibodies are identified there is the question of how to produce them in large amounts.

## TECHNOLOGY

Based on proprietary technology acib is able to develop an *E. coli in vivo* selection system mimicking the human adaptive immune system for rapid clonal selection and amplification of strains producing large amounts of high-affinity antibody recognising SARS-CoV-2 epitopes. The technology is based on a fusion of a chosen antigen to a highly bactericidal human defensin that can enter the periplasm of *E. coli*, combined with a bacterial periplasmic expression library of human Fabs. Only cells expressing a specific Fab secreted into the periplasm can inactivate the defensin due to steric hindrance and thus survive. Once the strain and library are set-up it would allow to go from clonal selection to gram quantities of the desired Fab in less than a month. This method represents a change of paradigm as it transforms novel antibody identification, optimization and production from state of the art *in vitro* phage display strategies to a much more efficient immune system-like *in vivo* selection protocol. ProFabSARS will be much faster and more economical than phage display technologies and the selected strain can be directly used to produce large amounts of the correctly folded antibody (since that were the selection criteria).

## OFFER

We offer to develop a ProFabSARS with your antigen(s) of choice. This technology can also be used for other purposes (antibodies against viral or fungal infections, as well as cancer antibodies).

## EXPERTS

Prof. Dr. Rainer Schneider  
Prof. Dr. Eduard Stefan

## AVAILABLE FOR

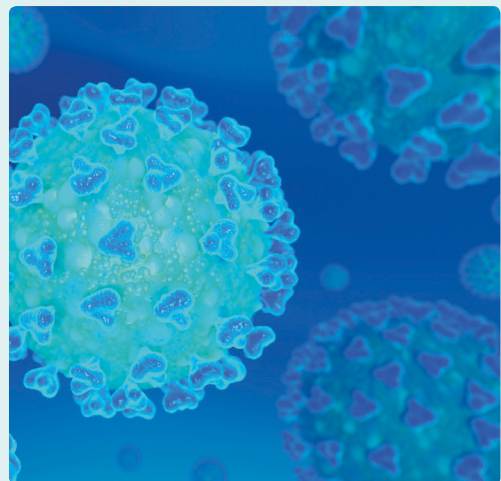
- Joint Research Project
- Contract Research
- COMET Funding call

## DEVELOPMENT STATUS

TRL 1-2

## KEYWORDS

- SARS-CoV-2
- COVID-19
- Therapeutics
- Antibodies
- Fab
- Affinity Maturation
- #fightthevirus



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