



COVID-19

Neutralizing Monoclonal Antibodies Against SARS-CoV-2 for COVID-19 Screening and Treatment

Brief Description of Technology

Development of neutralizing monoclonal antibodies (mAbs) that bind to the spike glycoprotein on SARS-CoV-2.

BUSINESS OPPORTUNITY

Non-exclusive license
Exclusive license
Sponsored research

TECHNOLOGY TYPE

Therapeutic
Diagnostic
Research tool

STAGE OF DEVELOPMENT

Preclinical *in vivo*

PATENT INFORMATION

Patent pending

INVESTIGATOR

Leonidas Stamatatos, PhD

Andrew McGuire, PhD

Marie Pancera, PhD

Vaccine and Infectious Disease

LEARN MORE

Tech ID: 20-158

partnering@fredhutch.org

206-667-4304

Technology Overview

The WHO declared COVID-19 a global pandemic as of March, 2020. The infection is caused by SARS-CoV-2, a beta coronavirus with 79.5% genome sequence identity to SARS-CoV. As of June, 2020, more than 400,000 people have died globally from COVID-19, and there remains no vaccine or approved therapeutic. The surface spike protein of SARS-CoV-2 binds ACE2 receptors on the surface of human cells. Once bound, the virus is able to enter the cell and translate RNA to produce more viruses. The SARS-CoV-2 envelope glycoprotein is a surface-exposed class-I fusion protein that has an ectodomain comprised of a receptor binding domain (RBD) subunit and a membrane-fusion subunit. Researchers at the Fred Hutch have developed neutralizing monoclonal antibodies capable of binding specific regions of the SARS-CoV-2 ectodomain. Drs. Stamatatos, McGuire, and Pancera have isolated 45+ monoclonal antibodies from serum samples derived from SARS-CoV-2 seropositive patients.

Applications

- Could serve as an immediate therapeutic
- These antibodies act as templates for vaccine development, or the development of screening tools and assays
- Use within a cocktail approach to reduce viral escape

Advantages

- Fully-humanized neutralizing antibody validated in live virus
- Blocks interaction with ACE2 receptor on human cells
- Cocktail application would

Market Overview

The Global Respiratory Disease Vaccine Market is expected to grow from USD 18,236.13 Million in 2018 to USD 25,236.13 Million by the end of 2025 at a Compound Annual Growth Rate (CAGR) of 4.75%. The global COVID-19 diagnostics market accounted for USD 4.9 billion in 2020 and with a CAGR of 6.1%, is estimated to reach USD 8.3 billion by 2029.