



Monoclonal Antibodies for Covid-19

Why in News

Recently, the **International AIDS Vaccine Initiative (IAVI)** and [Serum Institute of India \(SII\), Pune](#) announced an agreement with **Merck, a science and technology company**, to develop **SARS-CoV-2 neutralising monoclonal antibodies (mAbs)**, which will be used to address the [Covid-19 pandemic](#).

- IAVI is a non-profit scientific research organisation dedicated to addressing urgent global health challenges. It is headquartered in New York, USA.
- SII is the world's largest vaccine manufacturer.

Key Points

▪ Monoclonal Antibodies:

- Antibodies are proteins produced naturally by the immune system that target a specific foreign object (antigen). They are called **monoclonal Antibodies (mAbs)** when they are produced by clones derived from a single parent cell.
- They are **man-made proteins** that act like a human antibody in the immune system. They are **made by cloning a unique white blood cell**.
- mAbs have **monovalent affinity**, it binds only to the **same epitope** i.e. the part of an **antigen** that is recognized by the **antibody**.
- They are designed to perform many roles, like they can be **used to carry drugs, toxins, or radioactive substances** directly to affected cells.
- mAbs are **used to treat many diseases**, including some types of **cancer**.

▪ mAbs and Covid-19:

- Neutralising monoclonal antibodies (mAbs) against SARS-CoV-2 were **co-invented by IAVI and Scripps Research**.
- They are widely considered to be promising candidates for Covid-19 treatment and prevention.
- Encouraging results for Covid-19 antibody treatment have emerged from preclinical research and from initial clinical trials.
- mAbs also have the potential to play an important complementary role to Covid-19 vaccines.
 - It can be used both for treatment and potentially for prevention, especially for those individuals who, due to age or medical conditions, may not benefit from vaccination.

Antibody

- **Antibody, also called immunoglobulin** is a **protective protein** produced by the immune system in response to the presence of a foreign substance, called an **antigen**.
 - A wide range of substances are regarded by the body as antigens, including disease-causing organisms and toxic materials.

- Antibodies **recognize and attack onto antigens** in order to remove them from the body.

Way Forward

- Given that many experts speculate that Covid-19 will become an endemic disease, and given the severity of symptoms in a significant proportion of people affected, effective therapies will be necessary to treat those who remain unvaccinated or whom vaccination does not protect.

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