



Mu Variant of Covid-19

Why in News

Recently, the [World Health Organisation \(WHO\)](#) has added a new variant of [Covid-19](#) in the list of **Variants of Interest (VOI)** and named it **Mu (B.1.621)**. It has also added **C.1.2** as a new VOI.

- According to [INSACOG \(Indian SARS-CoV-2 Genomics Consortium\)](#), India has so far not seen Mu and C.1.2, and the [Delta variant](#) and its sub-lineages continue to be the main **Variants of Concern (VOC)**.
- **C.1.2 is a sub-lineage of the C.1 variant described in South Africa** but did not spread globally.

Key Points

▪ About:

- **Mu belongs to the lineage B.1.621 variant** and named after the twelfth letter of the Greek alphabet. It was **first detected in Colombia in January 2021**.
- It has a constellation of mutations that **indicate potential properties of immune escape**. It has several substitutions affecting the [Spike Protein](#) and amino acid changes.
- It has **seen mutations**, E484K, N501Y, P681H, D614G, which have been reported in other VOIs and VOCs.
- It is the **fifth 'VOI'** to be monitored by WHO. The **other four** VOIs are:
 - Eta (lineage B.1.525), Iota (lineage B.1.526), Kappa (lineage B.1.617.1), and Lambda (lineage C.37).

▪ Variants of Interest:

- A variant is placed in the VOI list if it is seen to have **certain "genetic changes that are predicted or known to affect virus characteristics** such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape".
- To be added to the VOI list, a variant must also be **"identified to cause significant community transmission or multiple Covid-19 clusters in multiple countries"**, and suggest "an emerging risk to global public health".

▪ Variants of Concern:

- A VOI can become a VOC if it is demonstrated to be **associated with an increase in transmissibility or virulence**, or with a **"decrease in effectiveness of public health and social measures** or available diagnostics, vaccines, and therapeutics".
- Currently, **four variants** of the coronavirus are designated as variants of concern:
 - **Alpha** (lineage B.1.1.7, the so-called 'UK variant'), **Beta** (lineage B.1.351, 'South Africa variant'), **Gamma** (lineage P.1, 'Brazil variant'), Delta (lineage B.1.617.2).

Mutation, Variant and Strain

- When a virus replicates it doesn't always manage to produce an exact copy of itself.

- This means that, over time, the virus may start to differ slightly in terms of its genetic sequence. ⁸⁼⁸⁻⁸
- Any **changes to the viral genetic sequence during this process** is known as a **Mutation**.
- Viruses with **new mutations** are sometimes called **Variants**. Variants can differ by one or multiple mutations.
- When a new variant has **different functional properties to the original virus** and becomes established in a population, it is **sometimes referred to as a New Strain** of the virus.
 - All strains are variants, but not all variants are strains.

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