



Feluda Test for Covid-19

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Why in News

Recently, the **Council of Scientific and Industrial Research's** Institute of Genomics and Integrative Biology (CSIR-IGIB) has developed **India's first paper strip test** for **Covid-19** namely, '**Feluda**'.

Key Points

- **Description:**

- The Feluda is a **paper strip test** that detects the coronavirus **in an hour**.
- Feluda is an acronym for **FNCAS9 Editor Linked Uniform Detection**.
- It is expected to help to fulfil an urgent need of the rapid testing in India.
- It is the first such indigenous test kit to be developed in India based on **Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) technology**.
 - **CRISPR** is a **gene editing technology**, which replicates natural defence mechanisms in bacteria to fight virus attacks, using a special protein called **Cas9**.
 - CRISPR-Cas9 technology **behaves like a cut-and-paste mechanism** on DNA strands that contain genetic information. The specific location of the genetic codes that need to be changed, or edited, is identified on the DNA strand, and then, using the Cas9 protein, which acts like a pair of scissors, that location is cut off from the strand.
 - A DNA strand, when broken, has a natural tendency to repair itself. Scientists intervene during this auto-repair process, supplying the desired sequence of genetic codes that binds itself with the broken DNA strand.

- **Comparison to the RT-PCR Test:**

- **Working Principle:** The Feluda test uses the **gene-editing tool-Crispr-Cas9** to target and identify genomic sequences of the novel coronavirus in suspected individual samples.

- **RT-PCR test (Reverse Transcription Polymerase Chain Reaction)**

- detects the virus genetic material, which is the Ribonucleic acid (RNA) .

- **Cost:** The Feluda test will cost less than Rs.500 compared to Rs. 4500 for the real-time PCR test which is currently being used for Covid-19 diagnosis in India.
- **Required Medical Machinery:** The Feluda test also **does not rely on expensive real-time PCR machines** for RNA isolation, DNA conversion, and amplification which are already in limited supply in the country.

Source:FE