

JNCASR Spinoff Launches Molecular Probes used in COVID-19 Test Kits

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VNIR Biotechnologies Private Limited, a spinoff by Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) an autonomous institute of the Department of Science & Technology launched **indigenous fluorescence probes and polymerase chain reaction (PCR) mix for reverse transcription polymerase chain reaction (RT-PCR) detection** which are molecular probes used in COVID-19 test kits.

Molecular Probes Used in COVID-19 Test Kits

A typical, PCR based test kit has **three critical components (oligos, enzymes, molecular probes)**. The first two are partly available in India and partly imported while **molecular probes used in COVID 19 tests, however are only imported**. The molecular probes are used to **track the amplification in PCR**. Their immediate application is for COVID-19 testing, but they are general-purpose molecular tools for **molecular diagnostic tests** of several diseases.

VNIR has innovated synthesis protocols for a suite of molecular probes, which will be useful for PCR based COVID-19 testing. VNIR will be filing for the protection of its process innovation. Molecular diagnostic tests used to be limited to research laboratories or for limited applications. COVID-19 has presented a unique problem that the finest level of molecular **diagnostic test has to be performed almost at a complete population level if needed**. Given the scale of tests required for COVID-19, it is very important to become **self-reliant with the critical test kit components**. Enzyme and oligo needs are partly met from Indian manufacturers, and VNIR

envisions to address the third critical component, which is the molecular probes.

Molecular probe development is a **consequence of synthetic organic chemistry**, by understanding several aspects of it – the molecule, its target, the availability of chemicals, and optimizing the yields at each step of the synthesis by a judicious choice of protocols. VNIR used its core strengths in molecular probe development to develop the molecular probes using novel synthetic routes.

[The VNIR Biotechnologies Private Limited is incubated at Bangalore Bio-innovation Centre (BBC) of the Karnataka government].