

CSIR-CDRI Team Developed the Technology of a Universal Quencher 'UniQ' for Nucleic Acid Research and Diagnostics



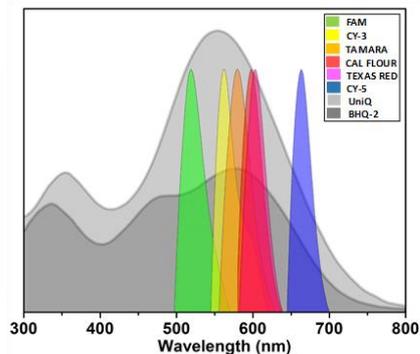
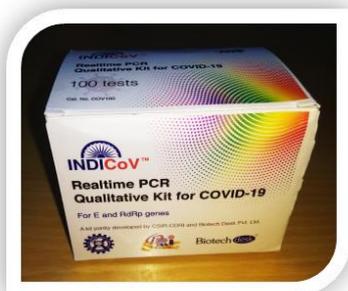
The Technology Transfer of “A New Fluorescence Quencher UniQ” to M/s Biotech Desk Pvt. Ltd. (BDPL), Hyderabad on 24th February 2023

In the august presence of Dr N. Kalaiselvi, DG-CSIR & Secretary DSIR, the research team led by Dr Atul Goel, Chief Scientist, CDRI has transferred the technology know-how of “A New Fluorescence Quencher UniQ for nucleic acid research and diagnostic applications” to M/s Biotech Desk Pvt. Ltd. (BDPL), Hyderabad on 24th February 2023.

For Taqman-like probe synthesis, different fluorescent dyes (FAM/VIC/HEX/Texasred/Rox/Cy5) and their respective quenchers (BHQ1, BHQ2, BHQ3, BBQ, QSY) are required. At present, Indian researchers either procure probes from US/Europe/Singapore/China or they import fluorescent dyes and quenchers for oligonucleotide synthesis. This makes 5', and 3'- labeling of oligonucleotide very expensive and also restricts the combination of fluorescent dyes and quenchers that can be used for multiplexing RT-PCR reactions. Under the government initiative to make India self-reliant, Dr. Atul Goel's group designed a novel universal quencher by incorporating electron donating and withdrawing groups onto diazenylaniline scaffold in combination with a pi-conjugating network. New Universal quencher UniQ showed broad absorption spectra and a single quencher UniQ can be used to quench different fluorophores (green to red) required for multiplexing RT-PCR experiments. As per the market survey, there is no single quencher with broad quenching range (500-750 nm) available in the global market.

The technology of a novel quencher has been patented (both in India and Abroad) and licensed (non-exclusive) to M/s. Biotech Desk Private Limited, Hyderabad. The commercial production is being taken up by the industry partner. Extensive applications of single- or dual-labelled oligonucleotides in molecular biology research, and expanding use of oligonucleotides in clinical therapeutics and diagnostics spaces, CDRI technology will lead to significant economic growth and impact to our nation.

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Absorption profile of commercial Quencher BHQ-2 and CDRI-UniQ