

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



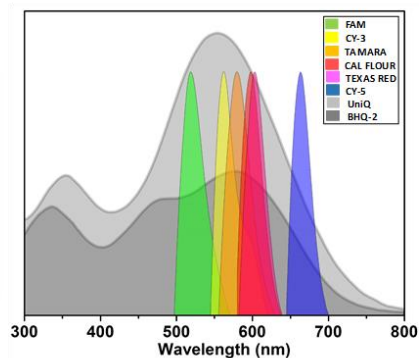
The Technology Transfer of “A New Fluorescence Quencher UniQ” to M/s Biotech Desk Pvt. Ltd. (BDPL), Hyderabad on 24th February 2023

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.

INDICov™ : A Realtime PCR Kit for COVID-19 Detection



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