BioSpectrum the business of Bio & Health Sciences

# IIT Jodhpur-led team develops fluorescent probe for Alzheimer’s detection

01 September 2022 | News

**A collaborative work between IIT Jodhpur, IIT Kharagpur and CSIR-IICB, Kolkata**

A multi-institutional team led by the Indian Institute of Technology (IIT) Jodhpur has developed an efficient fluorescent molecular probe that can be used in the diagnosis of Alzheimer’s disease (AD).

The research has been carried out in collaboration with the Indian Institute of Technology (IIT) Kharagpur, and the Council of Scientific & Industrial Research - Indian Institute of Chemical Biology (IICB), Kolkata.

AD is believed to be caused by the abnormal build-up of plaques in and around brain cells. Plaques are aggregates of a type of small protein (peptide) called amyloid-beta (A?).

The researchers have successfully designed and developed a series of benzothiazole-based fluorescent molecules that can selectively bind to A? aggregates. All these molecules were seen to emit fluorescence in one colour when unbound, and the emission colour shifted towards red in the visible light (rainbow – violet indigo blue green yellow orange red) spectrum with a concomitant increase in fluorescence intensity.

This molecule was stable in biological fluids and could easily traverse the blood-brain barrier. It was also selective to A? aggregates in the presence of competing biomolecules. Hence, the probe found by the research team will provide a non-invasive and inexpensive reliable alternative to a spinal tap or PET Scan method for Alzheimer’s diagnosis.