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## Acrylonitrile Embedded Benzimidazole-Anthraquinone Based Chromofluorescent Sensor for Ratiometric Detection of CN- ions in Bovine Serum Albumin

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The cyanide ion is a physiological relevant anion, also, known for its high toxicity, harmful effects to living creature and the environment. Thus, we have been interested in qualitative nad quantitative estimation of cyanide ions. We would like to present the designing and synthesis of a novel probe **3,** synthesized by conjugating anthraquinone with 2-(1*H*-benzo[*d*]imidazol-2-yl) acetonitrile. The probe **3** potentially detects CN- ions in $H_2O/CH_3CN$ (1:9; v/v), solid state, and plasma-like solution via chromo-fluorometric approach. The probe **3** displayed an absorption redshift from 415 nm to 472 nm and emission redshift from 510 nm to 610 nm in the presence of CN- ions, in $H_2O/CH_3CN$ (1:9; v/v). The instantaneous colour change for probe **3** from yellow to orange along with red emission in the presence of CN- ions accompanied witha very low detection limit of $37 \times 10^{-9}$ M. Furthermore, probe **3** is also utilized as a portable paper strip for on-site detection of CN- ions. The ^{1}H NMR, mass spectrometry and theoretical calculations analysis confirmed the nucleophilic addition of CN- ions to probe **3**.

### Biography:

Gulshan Kumar received his bachelor's Degree (B.Sc. Non-Medical) in 2009 from Punjabi University, Patiala and Master's Degree (M.Sc. Chemistry) in 2011from Himachal Pradesh University, Shimla. Presently he is pursuing his doctoral degree (PhD) under the supervision of Dr. Vijay Luxami at School of Chemistry andBiochemistry, ThaparInstitute of Engineering and Technology, Patiala. His research areas include Physical organic chemistry, supramolecular materials, photochemistry in solution and aggregationand their applications in sensing.

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