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**Sub: Acceptance letter of proposal for collaborative research**

To,

Date:23.06.2023

Dr. Sibaprasad Maity

Principal

Sagardighi Kamada Kinkar Smriti Mahavidyalaya

Sagardighi, Murshidabad, West Bengal, PIN -742226

Dear Dr. Maity,

It is my great pleasure to accept your collaboration proposal for future research, since we have been working together last ten years with the significant outcome by publishing many articles in various reputed international Journals. We believe that by collaborating in the field of chemosensors research, we can combine our strengths and resources to achieve mutual goals and make a significant impact in sensors research. We would love to discuss this opportunity further and explore how we can work together to create value for both our organizations CHRIST University, Bengaluru and Sagardighi Kamada Kinkar Smriti Mahavidyalaya. Your precious ideas and suggestions definitely help us to develop many future collaboration opportunities.

Place: Bangalore, India

Best regards

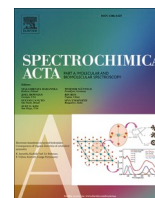
Avijit Kumar Das

(Dr. Avijit Kumar Das)



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# Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

journal homepage: [www.journals.elsevier.com/spectrochimica-acta-part-a-molecular-and-biomolecular-spectroscopy](http://www.journals.elsevier.com/spectrochimica-acta-part-a-molecular-and-biomolecular-spectroscopy)

## Development of a fluorescent scaffold by utilizing quercetin template for selective detection of $\text{Hg}^{2+}$ : Experimental and theoretical studies along with live cell imaging

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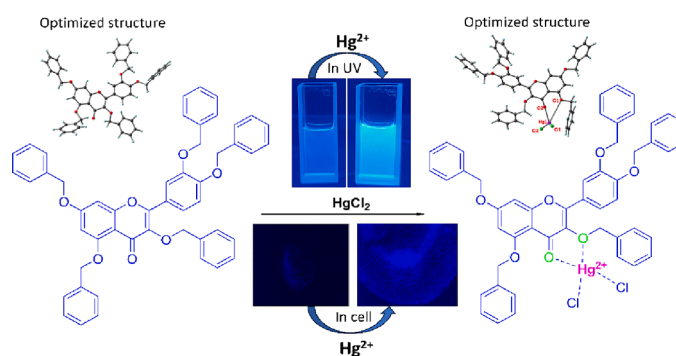
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### HIGHLIGHTS

- We have developed a novel quercetin (a SARS-CoV-2 inhibitor) coupled benzyl ethers (QBE) chemosensor for selective detection of  $\text{Hg}^{2+}$ .
- To date, there are very few reports where quercetin itself have been used in sensing field (table 1) but the use of quercetin derivative in sensing field is almost nil.
- To the best of our knowledge our chemosensor QBE is the first chemosensor based on quercetin derivative for the selective detection of  $\text{Hg}^{2+}$ .
- The binding phenomenon of QBE with  $\text{Hg}^{2+}$  has been proved by UV-vis, fluorescence, DFT and cyclic voltammograms study.
- Lower LOD (Limit of Detection) at 8.47  $\mu\text{M}$  and high binding constant value as  $2 \times 10^4 \text{ M}^{-1}$  showed the strong binding affinity of  $\text{Hg}^{2+}$  towards QBE.
- The intracellular activity of QBE with  $\text{Hg}^{2+}$  binding has been examined by using living plant tissue by using green gram seeds.

### GRAPHICAL ABSTRACT



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