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Gold nanoparticles based electrochemical biosensor for the detection of *Escherichia coli* ATCC 25922

Sallahuddin Panhwar¹, Syeda Sara Hassan¹, Rasool Bux Mahar¹ and Hammad Malik²

¹University of Engineering & Technology, Pakistan

²University of Utah, USA

The aim of this study was to develop a simple electrochemical sensor for detection of (E.coli 25922) from water using gold nanoparticles. The water security and microbiological defense applications are globally concerns because of accuracy in the results and time saving technology. The traditional detection method of bacteria is requiring more time for the results. The biosensor reduce the detection time from 2 to 3 days to less than one hour with a simple identification method. The detection of pathogenic bacteria (E.coli 25922) is pivotal to public health for the water and food security. The electrochemical detection is applied for the detection of E. coli. However, in resulting the lowest bacterial concentration was weekly at 1×10^1 CFU/ml and the strongly on 1×10^6 CFU/ml. The electrochemical signal was increased with the increasing concentration of E. Cali. These results confirmed that the AuNPs-GCE is an effective approach to highly sensitive detection for the E.coli.

Biography

Sallahuddin Panhwar is a PhD Student of US-Pakistan Center for Advanced Studies in Water (USPCAS-W) at Mehran Univeristy of Enineering & Technology Jamshoro, Pakistan. Currently he is exchnage visiting scholar at the Univerosty of Utah, U.S.A. He has published more than 8 research papers in reputed journals and attended national and international conferences.

panhwarsallahuddin@gmail.com

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