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## Glycoconjugates Capped Multifunctional Gold Nanorod Based Nanobiosensor for Detection of Multiple Food Borne Bacteria

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Food borne bacterial species have been identified as the major pathogens in most of the severe pathogen-related diseases among humans. Conventional methods like plating and ELISA are time consuming, laborious and require specialized instruments. So there is a great need of detection techniques for food borne pathogens which is reliable, simple, inexpensive, time saving as well as gives the appropriate results with the higher specificity and sensitivity. Nanotechnology has emerged as a great field in case of rapid detection of pathogens in recent years. Among the several nanomaterial based biosensor the gold nanorods (AuNRs) based nanobiosensor has achieved a great interest. The AuNRs material has good electro-optical properties because it has a larger light absorption band and scattering in surface plasmon resonance wavelength regions. Bacterial cells have lectins that are specific for certain carbohydrate through which bacteria adheres to host cell. By exploiting the sugar based adhesion properties of microorganism we can use the gold nanorods as a potential nanobiosensor to detect the food borne pathogen. Nanobiosensor can have an applied impact by offering a promising solution for food quality monitoring by a time effective and economical way. In this study, Polyethlene glycol (PEG) coated AuNRs were prepared and functionalized by different types of sugars. These sugars functionalized AuNRs were characterized by lectin binding assay. These sugars conjugated AuNRs were also tested with different strains of bacteria. Different bacterial strains were tested with sugar functionalized AuNRs. Bacterial strains having affinity with sugar functionalized AuNRs were also characterized by TEM.

### Biography:

Nitesh Priyadarshi working as a research scientist in National Agri-Food Biotechnology Institute. And Priyadarshi special interest research in Biotechnology for Nutritional Security.

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