

عنوان مقاله:

A novel optical DNA biosensor for detection of trace concentration of Methylene blue using Gold nano-particles and Guanine rich single strand DNA

محل انتشار:

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خلاصه مقاله:

The glass surface modification with ۳-(mercaptopropyl) trimethoxysilane (MPTS), gold nano-particles (GN) and guanine rich single strand DNA (ss-DNA) was utilized as a novel and efficient platform for sensing trace concentration of methylene blue (MB) by an inexpensive spectrophotometric method. Methylene Blue (MB) can interact with the guanine base of single strand DNA and absorbed onto glass surface and its absorbance can be determined at λ_{max} of MB. Increase in methylene blue absorbance was linear with an increase in MB concentration and can be viewed by the naked eye and detected by spectrophotometric method. The linear range of the developed biosensor for determination of MB was from 10 to 100 nmol L⁻¹ with a detection limit of ۴ nmol L⁻¹. The fabricated spectrophotometric .MB biosensor possessed excellent selectivity and good sensitivity

کلمات کلیدی:

Glass Surface, Gold Nano-particles, Guanine, Methylene blue, Optical DNA Biosensor, Single Strand DNA

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