

Specific and sensitive detection of nucleic acids and RNases using gold nanoparticle-RNA-fluorescent dye conjugates

김중현*, 김성지¹, Norbert Reich²
포항공대 정보신소재 연구소; ¹포항공대 화학과;
²Univ of California, Santa Barbara
(joong@postech.ac.kr*)

Gold nanoparticle (GNP)-based assays have been used to detect biomolecules such as DNA and proteins. These assays rely on the ability of GNPs to undergo colorimetric changes or induce fluorescence quenching of proximal dyes. The highly efficient energy transfer between GNPs and fluorophores provides a basis for improved assay design and multiplexing potential. Here we describe our use of GNPs coated with RNA for the detection of specific DNA sequences and of two RNA metabolizing enzymes, RNase H and RNase A.