

FRET Phenomena between Dendrimer-Q dots Donor and Antibody Acceptor

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This study describes the effect of dopamine concentration on FRET (Fluorescence Resonance Energy Transfer) between dendrimer-CdS quantum dots and dye labeled antibody. Dendrimer-CdS quantum dots as donor and AlexaFluor488 Goat anti-Rabbit IgG as acceptor overlapped emission and absorption peak properly, which appeared at 460nm and 495nm, respectively. Their optical properties were measured UV-Vis and PL (Photoluminescence spectroscopy). PL and life time demonstrated the distance of between donor and acceptor(r) at 26Å. In addition Förster distance (R_0) analyzed 44.894Å. The energy transfer increased more than 2 times posterior to the antibody-antigen reaction after 30minutes. CdS quantum dots emission peak is on the decrease resulting from increased concentration of dopamine. However emission peak AlexaFluor488 at 520nm appeared increase. It measured using ELISA(Enzyme-Linked Immunosorbant Assay).