

A Nanoparticle-based technique for detection of *E. coli* O157:H7

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The rapid and sensitive detection of pathogenic bacteria is extremely important in field of food safety and medical diagnosis. Current available detection methods are either lacking of sensitivity or taking of too much time. A nanoparticle-based bioassay technique for detection of *E. coli* O157:H7 was investigated. *E. coli* cells were treated with Hoechst 33258 and then finally incubated with antibody-conjugated nanoparticles. An extremely high intensity of fluorescent signal produced by the nanoparticle could be observed using a fluorescence microscope. This study is to develop a nanoparticle-based method which could rapidly and specifically detect for *E. coli* O157:H7 through antibody-antigen interaction and recognition.