Abstract

Gold nanoparticles (AuNPs) can be functionalized with a wide variety of molecules through electrostatic, hydrophobic, or thiol-gold affinity interactions. AuNP conjugates combine the unique properties and functions of both the nanoparticle and the additional molecules. The ykkCD riboswitch serves as a regulator for a multidrug-resistance efflux pump. This riboswitch was first discovered in *B. subtilis* and specifically recognizes tetracycline family of antibiotics. Our research is focused on attaching the riboswitch aptamer to well-characterized AuNPs and demonstrating that ykkCD remains functional following attachment. Future applications of this research include the delivery of tetracycline to resistant bacteria.

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