



## Dual-Responsive Nanoparticles For Enhanced Antibacterial Efficacy

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### The Invention

UW Madison researchers have provided herein biodegradable polymers and nanoparticles comprising such polymers. The present nanoparticles deliver antibiotics to infected tissue with enhanced antibacterial efficacy. Thus, the present technology provides a nanoparticle comprising: a surface comprising one or more polysaccharides having specific binding affinity for bacteria; a core comprising a biodegradable polymer; and an antibacterial drug loaded within the core; wherein the biodegradable polymer comprises nitrogen-containing ionizable functional groups; the one or more polysaccharides having specific binding affinity for bacteria; and disulfide groups; the one or more polysaccharides are attached to the biodegradable polymer through phenyl boronic ester linkages; and the nanoparticle surface displays the polysaccharides such that the polysaccharide are available to bind to a bacterial cell surface.

### Additional Information

#### For More Information About the Inventors

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#### Tech Fields

- [Therapeutics & Vaccines : Anti-infectives \(antibacterials, antifungals, antivirals\)](#)

For current licensing status, please contact Rafael Diaz at [rdiaz@warf.org](mailto:rdiaz@warf.org) or 608-960-9847