## Reactive oxygen species-responsive polymeric prodrugs for the treatment of inflammatory diseases

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The application of traditional anti-inflammatory therapeutical agents for inflammatory disease treatment faces challenges from the insufficient therapeutic efficacy and undesirable systemic side effects owing to their non-specific biodistribution and poor stability.<sup>1,2</sup> Herein, we designed a simple reactive oxygen species (ROS)-responsive polymeric prodrug, which can be self-assembled into nanoparticles (ROS-NPs). The nanoparticle system can protect drug activity during blood circulation and control drug release upon oxidative stress activation. In mouse models of rheumatoid arthritis and ulcerative colitis, the intravenous injection of ROS-NPs realized high accumulation at inflamed sites with enhanced therapeutic efficacy in comparison with clinical anti-inflammatory drugs. The presented promising therapeutic effect complemented with a good biocompatibility suggests the potential of ROS-NPs to be developed as a broad-spectrum, effective and safe nanotherapeutic system for various inflammatory diseases.

## **References:**

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