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### Basic Study

Evaluation of a chitosan-polyethylene glycol paste as a local antibiotic delivery device

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### Abstract

#### AIM

To investigate the efficacy of a chitosan/polyethylene glycol blended paste as a local antibiotic delivery device, particularly in musculoskeletal wounds.

### METHODS

Acidic (A) chitosan sponges and neutralized (N) chitosan/polyethylene glycol (PEG) blended sponges were ground finely; combined in ratios of 3A:2N, 1A:1N, and 2A:3N; then hydrated with phosphate buffered saline (PBS) to form a chitosan/PEG paste (CPP). Both *in vitro* and *in vivo* studies were conducted to determine the potential CPP has as a local antibiotic delivery device. *In vitro* biocompatibility of the paste was interpreted as the cytotoxicity to fibroblast cells exposed to the experimental groups. Degradation rate was measured as the change in dry mass due to lysozyme based

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