

# Antibacterial Root Canal Irrigant that Causes Less Tissue Damage

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## Technology description

### An Endodontic Irrigant that Uses Cysteamine Instead of Sodium Hypochlorite to Kill Bacteria

This irrigant for use with root canal procedures kills bacteria and removes biofilms within the root canal system more effectively and causes less tissue damage than bleach. Endodontists perform more than 15 million root canal procedures each year, according to the American Association of Endodontists. Currently, the most commonly used irrigant in root canal therapy is sodium hypochlorite (bleach), but this antimicrobial also has the potential to cause serious tissue damage and adverse events. Researchers at the University of Florida have developed an antibacterial root canal irrigant solution that uses cysteamine instead of bleach. This irrigant decreases bacterial loads and removes bacteria biofilms more effectively than sodium hypochlorite, making it significantly safer.

## Technology

Irrigants are medicated fluid solutions that work alongside dental instruments to clean and prepare teeth for endodontic procedures. Common disinfection protocols in endodontics use bleach as an irrigant due to its antibacterial efficacy and low cost. However, bleach can cause significant pain and nerve damage in some patients. This root canal irrigant solution containing cysteamine is more effective than bleach at removing endodontic biofilms and at decreasing the number of viable bacteria. Additionally, it contains antiviral and antifungal properties and it will decrease dentin erosion and tissue damage, making it a competitive alternative to the widely-used bleach irrigants on the market.

## Application area

Cysteamine used as an antibacterial irrigant for root canal treatment, apicoectomy and other dental procedures

## Advantages

Disrupts endodontic biofilm and removes more bacteria than the currently used standard irrigant, making it more effective and safer to use

Irrigates both the external root surface and the osteotomy site, making this the first product to address both possible infection sites during endodontic surgery, or apicoectomy

Causes less tissue damage than bleach, leading to better surgical outcome

Treats ophthalmic diseases as an FDA-approved treatment, shortening the route for FDA approval for this new use

## Institution

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