

# TECHNOLOGY AVAILABLE FOR LICENSING



**University of  
Dayton**

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## Cationic, Water-Soluble Molecules to Prevent the Formation of Biofilms

### Advantages:

- Kills bacteria and bacterial biofilms
- Safe to human cells
- Kills both bacteria, and biofilms
- Enhances the efficacy of existing antibiotics

### Applications:

- Cystic Fibrosis treatment
- Antibiotic resistant bacteria
- Water treatment
- Treatment of mucoid pseudomonas
- Excels in photo-dynamic therapy

### Description:

Bacterial biofilms associated with infections are an increasing problem for antibiotic treatments and delivery techniques because they form a natural boundary that prevents delivery to the bacteria and infected site. The water-soluble molecules that are the subject of this technology are transition metal complexed porphyrins. These molecules are selectively uptaken in pathogenic bacteria, whereby the molecule kills the bacteria. Additionally, the molecule breaks down the protective barrier of the biofilms and attacks the bio-film's extra-cellular DNA. By breaking down and destroying the structural elements of the biofilm the molecule creates pathways that permeate the biofilm and selectively kill pathogenic bacteria. Although this molecule works well alone, it also has the potential to increase the efficacy of existing antibiotics.

### IP Status:

<https://patents.google.com/patent/US9364537B2/en>

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#### UD Reference #:

UD 587

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