Thiazolidinediones in Prevention and Destruction of Biofilms (Yissum)

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Novel heterocyclicals inhibit quorum sensing

Categories	**Formulation, Dental Care, Biofilms**
Development Stage	**Various field trials in process**
Patent Status	**Patent pending; additional patent to be filed shortly**
Market	**Biofilms cost millions of dollars each year in medical and nosocomial infections, product contamination, equipment damage, energy losses**

Highlights

- **Quorum sensing takes place in biofilms where microbes such as bacteria and fungi are at close proximity to one another**
- **Inter species quorum sensing may affect microbes' physiology and virulence properties, resulting in the enhanced virulent properties of biofilms**
- **Prevents formation of biofilms as well as disruption of existing biofilms**
- **Many applications in health, water systems, for sterilization of large surfaces, such as walls and floors, in prevention of biofouling and bioerosion**

Our Innovation

- **Synthesis of novel thiazolidinediones that present a new anti-microbial approach by interfering with the quorum sensing of bacteria and fungi in biofilms**

Key Features

- **Compounds used are not lethal to bacteria – they are used at concentrations lower than the MIC (minimal inhibitory concentration) - greatly reduces the development of resistance**
- **Can be used together with known antibiotics and biocides at much lower concentrations**
- **May be used to prevent formation of biofilms as well as disruption of existing biofilms**

Development Milestones

- **Seeking investment and industrial cooperation for commercialization**

The Opportunity

- **Development for use as a non-antibiotic approach to infection therapy**
- **Medical applications to prevent biofilms in catheters and tubing; large surface sterilization**
- **Useful in any water system to counteract biofouling – filtration membranes, air conditioning, desalination and more**
- **Prevention of biofouling of irrigation systems using recycled water**

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