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PURE Bioscience Reports Study Showing Effectiveness of SDC Against Biofilm

PURE Bioscience, Inc., creator of the patented silver dihydrogen citrate (SDC) antimicrobial, today announced preliminary in vitro laboratory results demonstrating SDC's effectiveness against biofilm in tests conducted by the University of Medicine & Dentistry of New Jersey.

Dr. Narayanan Ramasubbu, associate professor in the Department of Oral Biology, states, "We have used SDC against single species biofilms of *Aggregatibacter actinomycetemcomitans*, a causative agent in localized aggressive periodontitis, and *S. epidermidis*, a pathogen associated with hospital settings. Our results show that these bacteria in the biofilm state are killed within minutes at 30 ppm of SDC. Not only did SDC kill biofilm bacteria but also it inhibited the biofilm formation at levels as low as 1.5 ppm in a citrate-containing medium."

According to Ramasubbu, biofilm bacteria predominate, numerically and metabolically, in virtually all nutrient-sufficient ecosystems, including the oral cavity. Biofilms play a role in the pathogenesis of dental caries, periodontitis, infective endocarditis, cystic fibrosis, pneumonia, prostatitis, osteomyelitis, otitis media, infectious kidney stones and other chronic infections. Bacterial cells in a biofilm are surrounded by a self-synthesized, three-dimensional matrix (slime or extracellular polysaccharide, EPS) that holds the cells together in a mass and firmly attaches the bacterial mass to a range of living and non-living surfaces.

Ramasubbu also explained that the exopolysaccharide mediates resistance to killing by antibiotics, detergents and antimicrobial peptides. However, bacteria in the biofilm can survive because of channels in them that circulate nutrients and water. Biofilms can be comprised of a single microbial species or multiple microbial species and eradicating them requires very specific, highly effective and environmentally safe agents that can adapt to the resistance.

Michael L. Krall, president and CEO of PURE Bioscience, notes, "SDC's ability to eliminate and even prevent biofilm presents a phenomenal market opportunity for PURE. We're directing ongoing research projects on biofilm not only in public health, but also in industrial environments, including food processing, and oil and gas, as we begin to present SDC as a viable solution to this costly and dangerous problem."

SDC is a new molecular entity, developed and patented worldwide by PURE Bioscience. An electrolytically generated source of stabilized ionic silver in liquid form, SDC provides superior antimicrobial efficacy with residual protection while mitigating bacterial resistance. SDC is colorless, odorless, tasteless, non-toxic and formulates well with other compounds, making it an ideal basis for a broad range of products. SDC is available in pre-formulated, ready-to-use products; including PURE's disinfectant and food contact surface sanitizer, and is also available in varying strengths of concentrate for use as an additive or raw material.