Bacterial Robotics Reports Research Findings on Tumor Surgical Product

SBIR Phase I findings toward "A Novel Approach to Cholesteatoma Treatment."

CINCINNATI, OH, USA –July 14, 2014 – Bacterial Robotics, a synthetic life biotechnology firm developing *ViruBots*™ and *BactoBots*™, announces research findings from its National Science Foundation (NSF) Small Business Innovation Research (SBIR) Phase I award that concluded 30 June 2014.

The grant launched the development of an enhanced bacterium (*BactoBot*™) to selectively target and kill cholesteatomas, benign tumors of the skullbase that can cause deafness, dizziness, facial palsy, brain abscess, and meningitis. Left untreated they can result in death.

The *BactoBot*, code named *AuriBot*™, is being developed to augment current skull-based surgical practices. The goal is to provide surgeons with a consumable product that uses lysis to destroy residual cholesteatoma cells after the primary skull-based surgery is complete.

Residual cells may lead to the recurrence rates as high as 10% in areas where the most sophisticated care is available. Recurrence rates are above 70% in less economically developed regions of the world.

If the augmentation development is successful, it might serve as the foundation to replace some invasive skull-based surgeries currently used to remove cholesteatoma.

Under an Institutional Review Board (IRB) exemption for cholesteatoma harvesting from the University of Cincinnati College of Medicine (UCCM) and the Cincinnati Children's Hospital, Medical Center (CCHMC), Bacterial Robotics successfully cultured cholesteatoma cells from 9 unidentified patients (out of 12 total patient tissues samples collected) using our established and optimized culture protocols.

Based upon research findings, Bacterial Robotics expanded the putative cholesteatoma surface marker candidates that meet *AuriBot* assembly criteria. Then it successfully detected the expression of these surface markers in cultured cholesteatoma cells. The company plans to engineer an *AuriBot* to target one or more surface markers of cholesteatoma cells. An *AuriBot* with multiple targets will have enhanced specificity and could potentially be used for treatments of cholesteatoma subpopulations.

Bacterial Robotics scientific team used a robust bacterial species as the chassis for the *AuriBot* assembly. These strains are ideal microbial platforms for conducting synthetic biology product development. The team discovered a preferential binding of the *AuriBot* to cultured cholesteatoma cells.

Ravi Samy, MD, FACS, Bacterial Robotics' Chief Medical Officer, stated, "These results represent an important step toward improving patient treatment outcomes and quality of life. I am significantly encouraged by these findings."

Dr. Samy is Director of the Neurotology Fellowship at the University of Cincinnati, College of Medicine, Director of the Adult Cochlear Implant Program, and Associate Professor of the Department of Otolaryngology.

An uncomplicated cholesteatoma surgery typically costs $40,000.00 USD. Approximately 150,000 of these surgeries are conducted annually in the USA. The resulting USA market for cholesteatoma surgery is over $600,000,000.00 per year. The global market is significantly larger.

Bacterial Robotics' CEO, Jason E. Barkeloo, added, "The deliberate and careful work by our interdisciplinary scientific team is commended. These findings are a direct result of their product development vision. The next few months could be exciting for us as the team expands its effort in lytically killing harmful cells with a *BactoBot*."

Barkeloo finished, "We thank the National Science Foundation for their support enabling us to reach these important findings. We are grateful for their continued assistance in developing this lytic technology that could have significant implications beyond cholesteatoma treatment; notably cancers."

About Bacterial Robotics LLC

An early developer in the emerging synthetic biology industry, Bacterial Robotics is headquartered in Cincinnati, Ohio with laboratory operations in Covington, Kentucky. The Company specializes in identifying markets for developing and deploying enhanced bacteria (*BactoBots*™) and viruses (*ViruBots*™); organism-based "robots" enhanced to produce, build, sense, and perform functions.

The Company's biotechnology products are protected by a consumable proprietary genetics rights management (GeRM™) key system. The GeRM system is a consumable additive that prevents the *BactoBots* against theft or release. The GeRM key consumable enables the Company's business model to gain revenues from the licensing of the manufacture and distribution of *BactoBots* and *ViruBots*.

Once Bacterial Robotics develops a *ViruBot* or *BactoBot*, it creates a go-to-market subsidiary to launch the product via partnerships with industry experts.

For more information on Bacterial Robotics, visit its web site at http://BacterialRobotics.com.

Contact
Jason E. Barkeloo – CEO
+1.513.252.2901
Twitter: @BactoBot or http://twitter.com/BactoBot
http://bacterialrobotics.com/contact/
info@BacterialRobotics.com

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