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SPACE MEDICINE

Vaccine Research To Continue On Atlantis Mission

by Staff Writers

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For the fourth time this year, NASA's Shuttle fleet is carrying a series of experiments being conducted by Austin-based Astrogenetix, a commercial biotech company created to use microgravity to develop the foundation of new medicines.

Payload on Space Shuttle Atlantis Flight STS-129 will consist of methicillin-resistant *Staphylococcus aureus* (MRSA) microbes in search of a target for a therapeutic or vaccine. Research will build on information gained during experiments conducted on board STS-128, which launched in August of this year.

Those experiments have allowed Astrogenetix to hone in on a specific group of genes that show promise for identifying a vaccine candidate. On STS-129, Astrogenetix will interrogate specific genes within this group to further narrow the scope of virulence determinants.

MRSA causes 100,000 serious infections and 19,000 deaths annually in the U.S. alone, a higher mortality rate than HIV/AIDS, emphysema or homicide. The MRSA "superbug," once largely confined to hospitals, is now becoming prevalent in the community, leading health experts to predict a steady rise in infections and mortality.

Previous space flight studies of the bacteria demonstrated that growth of this organism in the microgravity environment elicits unique interactions in biological systems that do not occur on Earth, specifically changes in virulence.

"Through our unique approach of conducting experiments in microgravity at the International Space Station, years may be eliminated from research and development to allow for fast-tracking of promising results," said John Porter, Chief Executive Officer of Astrogenetix.

Astrogenetix has worked closely with NASA in an effort to fully utilize the International Space Station, one of NASA's primary priorities. Since its formation in early 2008, Astrogenetix has flown on six shuttle missions, focusing on developing vaccine and therapeutics, and is slated to fly on all remaining shuttle missions.

"We're proud to be part of the groundbreaking medical research that can be done in space," said Thomas B. Pickens III, Astrogenetix's Chairman of the Board.

"By utilizing the incredible research capabilities of the ISS, we are at the forefront of solving worldwide medical problems like Staph infections or salmonella that afflict thousands of people across the globe."