Streptococcus Gene Expression in Space-2 (SPEGIS-2) Launch – STS-129, 11/16/09

PI: David Niesel , University of Texas Medical Branch, Galveston

Summary: SPEGIS -2 is a follow-on study to the MDRV SPEGIS II studyin which the PI discovered a profound increase in the virulence of *Streptococcus pneumoniae grown during flight and injected into mice post flight* . SPEGIS-2 is a mission of opportunity provided by BioServe, Inc.

Objectives:

- Verify spaceflight increases virulence of *S. pneumoniae*
- Compare *S. pneumoniae* virulence when grown at +37 ^{o}C vs ambient temperatures in space
- Determine the biochemical basis for the increased bacterial virulence

Accomplishments:

SPEGIS -2 PI was selected for STS-129 flight opportunity in September, 2009 and completed ground testing and flight preparation activities with BioServe in time to meet November flight.

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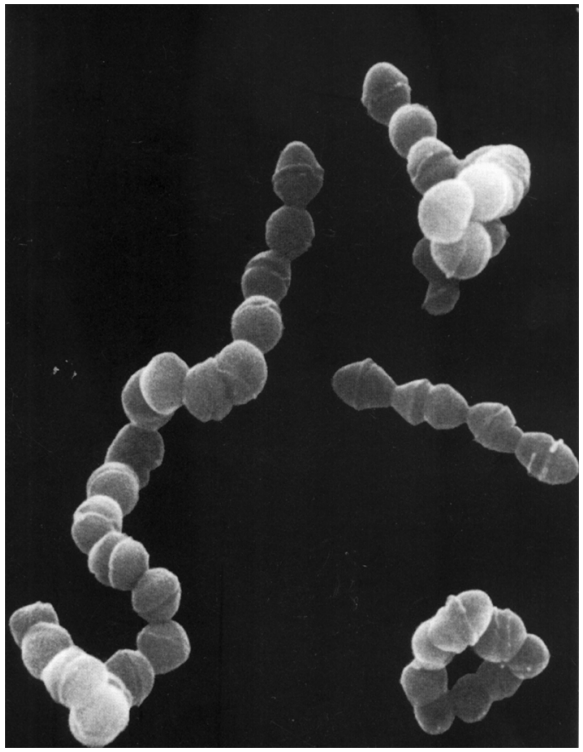
Significance:

SPEGIS-2 builds upon the findings of the original SPEGIS experiment and the MDRV SPEGIS II experiment. The PI will be able to conduct a comprehensive study to combine in vivo mouse infection analyses with molecular and biochemical analyses to determine the basis for changes in bacterial virulence due to the space flight environment.



Streptococcus pneumoniae