

NovaSterilis Receives \$100,000 Research Grant

National Science Foundation Funds New Vaccine Development

ITHACA, NY, May 23rd, 2006 – **NovaSterilis**, an Ithaca, NY company, has been awarded a \$100,000 Phase-I Small Business Innovation Research (SBIR) grant from the U.S. National Science Foundation Institutes of Health. Funding was awarded for a project entitled “A New Vaccine Development Method,” effective July 1st, 2006. The company will develop its patented supercritical carbon dioxide sterilization method in the project to inactivate microbial pathogens for use as active vaccine components.

Traditional methods of chemical and heat inactivation of pathogens suffer from significant drawbacks. Some methods result in vaccine preparations that contain varying amounts of formaldehyde, a potential health hazard. Chemical inactivation may also result in molecular changes that reduce the immunogenicity of key antigens. Such deficiencies may require multiple vaccinations against a given pathogen. When chemical or thermal inactivation methods fail, it may become necessary to develop non-living, subunit-derived vaccines, whose design and production is much more costly and time-consuming.

Inactivation of microbial pathogens by supercritical CO₂ represents a major advance in whole-cell vaccine methodology for two reasons. The resulting vaccine preparations contain no toxic residues, and should exhibit higher levels of immunogenicity, since supercritical CO₂ does not affect the structures of proteins, carbohydrates and other macromolecules that are integral cell wall and membrane components. Inactivation of microbes using supercritical CO₂ is also amenable to large-scale vaccine preparation and can inactivate a broad range of bacterial species.

“Because of its simplicity and reliability, we believe the method will become a viable alternative for the rapid generation of vaccines against emerging pathogens,” commented **David Burns, President and CEO of NovaSterilis**. The objectives of the SBIR program, which was established in 1982, are to stimulate technological innovation, while strengthening the role of small businesses in meeting Federal R&D needs.