



**THE UNIVERSITY of TEXAS**

**HEALTH SCIENCE CENTER AT HOUSTON**

Office of Technology Management

## **BACTERIAL STRAIN WITH ALTERED PHOSPHOLIPID COMPOSITION FOR THE PRODUCTION OF CARDIOLIPIN**

The Technology: Dr. William Dowhan at the University of Texas Health Science Center at Houston (UTHSC-H) has developed a bacterial strain to construct null mutants in specific steps of phospholipid biosynthesis. The anionic phospholipid (phosphatidylglycerol and cardiolipin) content of the mitochondria can be varied and controlled in these mutants. Cardiolipin is an essential lipid of the mitochondria and until recently has been understudied as to function and regulation of synthesis because of the lack of mutants and cloned genes.

### Publications:

- Dowhan, W. (1997). Molecular basis for membrane phospholipid diversity: Why are there so many phospholipids. *Annu. Rev. Biochem.* 66: 199-232.
- Ostrander, D. B., Sparagna, G. C., Amoscato, A. A., Dowhan, W., and McMillin, J. B.: Decreased Cardiolipin Synthesis Corresponds with Cytochrome c Release in Palmitate-Induced Cardiomyocyte Apoptosis. *J. Biol. Chem.* 276: in press, 2001.
- Zhang, M, Mileykovskaya, E. and Dowhan, W.: Cardiolipin is essential for organization of complexes III and IV into a supercomplex in intact yeast mitochondria. *J. Biol. Chem.* 280: 29403-29408, 2005.
- Zhang, M., Mileykovskaya, E., and Dowhan, W.: Gluing the Respiratory Chain Together: Cardiolipin Is Required for Supercomplex Formation in the Inner Mitochondrial Membrane. *J. Biol. Chem.* 277, 43553-43556, 2002.

### **NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION**

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

**UTHSC-H Ref. No.:** 2005-0036

**Inventors:** Dowhan

**Patent Status:** N/A

**License Available:** world-wide; non-exclusive

To obtain further information about this technology, please contact:  
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