



## *New Licensing Opportunity*

# Modified Protein-C (“MPC”) and its use against Thrombosis

**Field of Technology:** Therapeutic for thrombotic disorders.

**Inventors:** Drs. Charles Esmon and Mikhail Simirnov

**Patent Information:** US patents 5,837,843 and 5,847,085. PCT application filed for technology covered under US patent# 5,847,085. Nationalized applications issued in Canada & Australia, and filed in Europe.

**Background:** Worldwide, thrombosis occurs to one in 1000 people. Protein-C deficiency (Type I & Type II) is a major factor contributing to thrombosis. In combination with other factors, the risk of thrombosis tends to increase exponentially in Protein-C deficient individuals. For example, Factor V Leiden mutation can cause Protein-C deficiency in individuals. Hence, such individuals are at 5 to 80 times more risk for thrombosis (depending on the type of mutation) than a normal person is. In combination with the use of oral contraceptives, such risk increases to levels greater than 100 times. Supplementing Protein-C in such individuals could substantially reduce thrombotic risk.

### **Disadvantages of regular (wild-type) Protein-C:**

Wild-type Protein-C is sensitive to inhibition by natural inhibitors like antiphospholipid antibodies. It is a poor anticoagulant in patients with Factor V Leiden, especially in those with low Protein-S levels.



Dr. Charles Esmon

### **Advantages of OMRF's**

**Invention:** MPC developed by OMRF scientists is resistant to natural inhibitors. Compared to wild-type Protein-C, MPC has more activity towards Factor V Leiden and can work in the presence of lower levels of co-factors (like Protein-S or other lipids) that are required to perform its function as an anti-coagulant. Thus, MPC is far more efficient in reducing thrombotic risk.

**Stage of development:** Undergone proof of concept studies and is ready for aggressive development. Seeking licensing/research collaborators to bring this technology to market.



Oklahoma Medical Research Foundation

**Contact:** Manu S. Nair  
Licensing Associate  
755 Research Parkway, Suite 410  
Oklahoma City, OK 73104-3600  
405-271-1846  
nairm@omrf.ouhsc.edu

A Cure  
Is Out There