

STEINER LECTURE
=====**DONALD HULTQUIST**
UNIVERSITY OF MICHIGAN

WEDNESDAY
10/10/07
4:45 P.M.
SCIENCE CENTER A255**“Pathological Oxidative Damage:
A Therapeutic Solution”**

A chemical abnormality is common to a great many serious medical problems including atherosclerosis, heart attack, stroke, acute lung injury, organ rejection, trauma, asphyxiation, and surgery. In these and many other medical emergencies, large amounts of “reactive oxygen species” accumulate with resulting oxidative damage of biomolecules, leading to tissue damage. The accumulation of abnormal quantities of these strong oxidants may result from their rapid generation or their slow destruction, either of which can result from altered metabolism. The altered metabolism can arise, in turn, from foreign materials, cell damage, impaired blood flow, or compromised cardiac or pulmonary function. Whereas normal cells have elaborate mechanisms for the rapid destruction of reactive oxygen species such as superoxide, peroxides, and the “higher oxidation states of iron”, in pathological states protective mechanisms may be defective and/or overwhelmed.

A major goal of modern medicine is to find therapies that result in a lowering of the levels of reactive oxygen species. This seminar describes the chemical studies and the logic that led to the successful testing in animals of two such compounds. These compounds serve as substrates for a cytoplasmic biliverdin reductase and the products of these catalyses destroy reactive oxygen species. The success of the animal studies begs the question of whether clinical testing, with its exorbitant costs, is warranted, but the lack of patent protection introduces a great challenge toward accomplishing this goal.

THERE WILL BE A RECEPTION FOR THE SPEAKER AT 4:30 P.M.
WEDNESDAY IN LOVE LOUNGE, REFRESHMENTS WILL BE PROVIDED

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