THE UNIVERSITY of TEXAS
HEALTH SCIENCE CENTER AT HOUSTON
Office of Technology Management

TREATMENT OR PREVENTION OF CGMP-DEPENDENT PATHOPHYSIOLOGY WITH A MUTANT VARIANT OF A SOLUBLE GUANYLYL CYCLASE

Market: The technology has the potential to reach a multitude of markets, such as: cardiovascular disease, treatment and prevention of tumors, treatment of penile dysfunction, and treatment of septic shock.

Competitors and Current Problems: It is known that soluble guanylyl cyclase (sGC) is an important enzyme that is involved in the regulation of cardiovascular homeostasis and pathologies (blood pressure, atherosclerosis, and septic shock), neurotransmission and sensory perception. Upon activation by these drugs the enzyme synthesizes intracellular messenger cGMP and regulates a number of cellular processes. There is no currently available method that can increase and sustain cGMP levels without drug administration. Drawbacks of the methods currently used in practice today are that the effects of nitroglycerin and NO-donors are transient, patients taking it often develop tolerance to their effects, and some of the allosteric regulators have toxic effects on cellular level.

The Technology: Researchers at the University of Texas Health Science Center at Houston (UTHSC-H) have developed compositions and methods of prevention and treatment of cyclic GMP-dependent pathophysiologies and to the development of drugs for use therein. More particularly, the technology pertains to such prevention, treatment and drug development using methods and compositions that employ a heme-deficient soluble guanylyl cyclase (sGC) enzyme or gene. Inhibition of sGC activity has been shown to be effective in the prevention of septic shock in animal, while activation or maintenance of sGC active state is beneficial for hypertensive conditions.
UTHSC-H has secured patent protection and is interested in implementation of this technology into a clinical setting.

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.

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Inventors: Murad, et al.
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License Available: world-wide; exclusive or non-exclusive

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