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Thrombus Inhibitor

Tech ID: 22973 / UC Case 2010-773-0

BACKGROUND

Exposed collagen in injured blood vessels provides a substrate for platelets to adhere and aggregate, initiating the first step in thrombosis, the formation of blood clots inside a blood vessel. Although platelets play an essential role in vascular injury, excessive platelet aggregation may also result in thrombotic disease such as stroke and heart attack.

TECHNOLOGY DESCRIPTION

Available for licensing is a collagen binding protein, named aegyptin, isolated from the salivary glands of the mosquito. Aegyptin selectively inhibits collagen-platelet aggregation, but not platelet aggregation induced by other agonists. In a collaboration between UCI and the NIH, scientists have functionally characterized aegyptin, demonstrating it blocks the interaction of collagen with its major ligands, von Willebrand factor, glycoprotein VI (GPVI), and integrin $\alpha 2B1$. These three ligands are of significant importance because they play a critical role in the early stages of thrombus formation, therefore aegyptin represents a potentially highly effective therapeutic to treat patients with thrombotic disease. Alternatively, aegyptin is potentially useful in conditions where collagen plays a critical role in angiogenesis or in conditions where excessive deposition of collagen plays a pathological role (i.e., pancreatic carcinoma).

FEATURES/BENEFITS

- Adjuvant to “Clot busting” therapeutics.
- Method to prevent and/or treat cardiovascular/thrombotic disease.
- Method to treat patients undergoing invasive cardiovascular procedures (e.g., angioplasty)
- Aegyptin inhibits thrombosis in its early stages by preventing collagen interaction with the three major ligands involved in thrombus/clot formation

PUBLICATION

» Aegyptin, a novel mosquito salivary gland protein, specifically binds to collagen and prevents its interaction with platelet glycoprotein VI, integrin $\alpha 2B1$, and von Willebrand factor. J Biol Chem. 2007 Sep 14;282(37):26928-38. [PMID 17650501]

PATENT STATUS

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OTHER INFORMATION

KEYWORDS

blood clot, thrombus, collagen, stroke, cardiovascular

CATEGORIZED AS

- » **Biotechnology**
- » Health
- » **Medical**
- » Disease: Cardiovascular and Circulatory System
- » Therapeutics

RELATED CASES

2010-773-0

Country	Type	Number	Dated	Case
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United States Of America	Issued Patent	8,980,859	03/17/2015	2010-773
United States Of America	Issued Patent	8,383,589	02/26/2012	2010-773

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