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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	9,441,022	09/13/2016	2010-773
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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