**Request Information** 

Permalink

# An Endogenous Anti-angiogenic Protein (EAP) and its Derivatives for Treatment of Cerebral Cavernous Malformations (CCM)

Tech ID: 27312 / UC Case 2016-214-0

#### **BACKGROUND**

Cerebral cavernous malformation (CCM) is a neurovascular disease that causes epilepsy and stroke for which there is no medical therapy. It has a prevalence of 5 per thousand in western populations and occurs in familial forms as a consequence of mutations in 3 CCM genes: CCM1/KRIT1, CCM2, CCM3/PCDC10 resulting in the formation of CCMs; mutations in the CCM1/KRIT1 gene account for 40% of the inherited cases. Once identified, CCM patients have a lifetime risk of CCM development and progression with increasing risk of stroke, epilepsy, or neurological impairment.

#### **TECHNOLOGY DESCRIPTION**

EAP is involved in the maintenance of vascular structure and homeostasis. Researchers at UC San Diego found that upon mutation of CCM1/KRIT1 gene, EAP expression is suppressed. Replacement of EAP is a novel potential therapy for CCM disease. Moreover, recombinant fragments of EAP have been shown to be therapeutic in a mouse CCM model of the disease.

# **APPLICATIONS**

Recombinant EAP, its analogues, or derivatives offer potential therapies to prevent CCM lesion development and progression.

## **ADVANTAGES**

Prior studies have shown that administration of recombinant EAP and/or its analogues are feasible in animal models and one

Phase I testing in humans resulted in no serious adverse reactions, demonstrating that EAP-based therapies are feasible and that

ultimately small molecule orally-available agents that mimic EAP may be developed to treat these patients.

# INTELLECTUAL PROPERTY INFO

A provisional patent has been submitted.

# RELATED MATERIALS

► Lopez-Ramirez MA, Fonseca G, Zeineddine HA, Girard R, Moore T, Pham A, Cao Y, Shenkar R, de Kreuk BJ, Lagarrigue F, Lawler J, Glass CK, Awad IA, Ginsberg MH. Thrombospondin1 (TSP1) replacement prevents cerebral cavernous malformations. J Exp Med. 2017 Nov 6;214(11):3331-3346. doi: 10.1084/jem.20171178. Epub 2017 Sep 28. - 11/06/2017

## PATENT STATUS

Country	Туре	Number	Dated	Case
United States Of America	Published Application	20190111111	04/18/2019	2016-214
Patent Cooperation Treaty	Published Application	2017180841	10/19/2017	2016-214

## CONTACT

University of California, San Diego Office of Innovation and Commercialization innovation@ucsd.edu tel: 858.534.5815.



## OTHER INFORMATION

## **KEYWORDS**

Endogenous Anti-Angiogenic protein
(EAP), Cerebral cavernous
malformation (CCM), epilepsy, stroke,
neurovascular disease

## **CATEGORIZED AS**

- **▶** Medical
  - ➤ Disease: Cardiovascular and Circulatory System
  - ▶ Therapeutics

RELATED CASES

2016-214-0

University of California, San Diego
Office of Innovation and Commercialization
9500 Gilman Drive, MC 0910, ,

La Jolla,CA 92093-0910

Tel: 858.534.5815
innovation@ucsd.edu
https://innovation.ucsd.edu
Fax: 858.534.7345

© 2016 - 2019, The
Regents of the University of
California
Terms of use
Privacy Notice