Vitamin E Metabolites for Inflammatory Disease Treatment

**Track Code:** 64885

**Categories:**
- Pharmaceuticals

**Keywords:**
- Cancer Therapy
- Inflammatory Disease
- Medical/Health
- Nutrition
- Pharmaceuticals
- Treatment Methods

The immune system plays a central role in maintaining health and disease development, but excessive immune response leads to inflammation. Proinflammatory mediators play important roles in regulating inflammatory response. Cyclooxygenase-1 (COX-1), Cyclooxygenase-2 (COX-2), and 5-lipoxygenase (5-LOX) play key roles in inflammatory responses; they are believed to be important in the development of degenerative disease as well.

Purdue University researchers have identified several vitamin E metabolites that act as potent inhibitors of COX-1 and COX-2, resulting in decreased inflammation. In addition, these long-chain carboxychromanol metabolites inhibit 5-LOX. Because these compounds inhibit the inflammation response through multiple pathways, they are useful anti-inflammatory agents and should have decreased side effects. Targeting COX-1, COX-2, and 5-LOX will result in a more potent anti-inflammatory effect than current nonsteroidal anti-inflammatory drugs. These compounds have potential use as effective cancer prevention and therapeutic agents, and in other chronic diseases, e.g., cardiovascular disease.

**Advantages:**
- More potent anti-inflammatory effect
- Decreased side effects
- Other potential uses

**Potential Applications:**
- Medical/Healthcare
- Pharmaceuticals
- Cancer Treatment

**People:**
- Jiang, Qing (Project leader)
- Gibbs (DECEASED), Richard A
- Lill, Markus

**Intellectual Property:**

**Application Date:** August 29, 2014  
Type: CIP-Patent  
Country of Filing: United States  
Patent Number: 9,676,744  
Issue Date: June 13, 2017

**Application Date:** September 17, 2009  
Type: Utility Patent  
Country of Filing: United States  
Patent Number: 8,822,529  
Issue Date: September 2, 2014

**Application Date:** June 8, 2017  
Type: CIP-Patent  
Country of Filing: United States  
Patent Number: (None)  
Issue Date: (None)

**Application Date:** September 17, 2009  
Type: PCT-Patent  
Country of Filing: WO  
Patent Number: (None)  
Issue Date: (None)

**Application Date:** September 17, 2009  
Type: NATL-Patent  
Country of Filing: Canada  
Patent Number: (None)  
Issue Date: (None)

**Application Date:** September 17, 2009  
Type: NATL-Patent  
Country of Filing: Australia  
Patent Number: (None)  
Issue Date: (None)

**Application Date:** September 19, 2008  
Type: Provisional-Patent  
Country of Filing: United States  
Patent Number: (None)  
Issue Date: (None)
Application Date: September 26, 2007
Type: Provisional-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Contact OTC:
Purdue Office of Technology Commercialization
1801 Newman Road
West Lafayette, IN 47906

Phone: (765) 588-3475
Fax: (765) 463-3486
Email: otcip@prf.org