Suppression of sPLA2-Integrin Binding for Treating an Inflammatory Condition or Suppressing Cell Proliferation

Tech ID: 24735 / UC Case 2015-192-0

ABSTRACT

Researchers at the University of California, Davis have found a number of peptides that bind to human secreted phospholipase A2 type IIA (sPLA2-IIA) and inhibit integrin signaling. These compounds show promise as therapies to decrease inflammation and cell proliferation, and may be developed for the treatment of conditions such as rheumatoid arthritis, asthma, Alzheimer's disease, and cancer. These compounds may also function in screening assays for new compounds that inhibit integrin signaling.

FULL DESCRIPTION

sPLA2-IIA binds to a variety of integrin molecules, which in turn signal the formation of a number of potent mediators that induce disease-related cellular processes including inflammation, apoptosis, and atherogenesis. While inhibition of sPLA2-IIA is believed to hold promise as an effective treatment for inflammatory disease, it has been observed that even catalytically inactive sPLA2-IIA mutants are able to enhance inflammatory processes via integrin signal transduction. Therefore, researchers have continued to search for alternative methods to suppress sPLA2-IIA/integrin signaling.

Researchers at the University of California, Davis have identified several peptides that suppress the interaction between sPLA2-IIA and integrins, and can potentially inhibit inflammation and cell proliferation. These peptides have been shown to specifically bind sPLA2-IIA, and allow the interaction of other ligands to remain active, thereby only inhibiting the signaling via sPLA2-IIA.

APPLICATIONS

- Screening methods for discovery of new compounds
- Inhibition of inflammation and cell proliferation
- Potential therapies for inflammatory and cell proliferative diseases such as rheumatoid arthritis, asthma, Alzheimer's disease, and cancer

FEATURES/BENEFITS

- Specific inhibition of sPLA2-IIA/integrin binding

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,591,471	03/17/2020	2015-192

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OTHER INFORMATION

KEYWORDS

sPLA2, sPLA2-IIA, integrin signaling, inhibitor, inflammation, inflammatory disease, cell proliferation, suppressor

CATEGORIZED AS

- **Biotechnology**
  - Health
- **Medical**
  - Disease: Autoimmune and Inflammation
  - Therapeutics
- **Research Tools**
  - Animal Models
  - Antibodies
  - Cell Lines

RELATED CASES

2015-192-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Novel Insight into Inhibiting IGF1 Signaling
- Tumor-Suppressing Growth Factor Decoy
- Novel Fibroblast Growth Factor 1-Derived Peptides for Therapy and Drug Discovery

- Modulating MD-2-Integrin Interaction for Sepsis Treatment
- Integrin Binding to P-Selectin as a Treatment for Cancer and Inflammation
- Novel IGF2 Signaling Inhibition

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