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hHv1 Polypeptide Modulators

Tech ID: 30417 / UC Case 2019-915-0

BRIEF DESCRIPTION

A novel class of hHv1 polypeptide modulators designed for selective modulation of hHv1 voltage gated channels, offering new avenues in medical treatment.

SUGGESTED USES

- » Inflammatory disease treatment, including acute lung injury/ARDS, stroke, and neuropathic pain
- » Birth Control through inhibition of sperm maturation
- » Autoimmune therapies by reducing ROS in white blood cells
- » Cancer therapeutics focusing on tumor reduction

FEATURES/BENEFITS

- » Selectively targets only hHv1 voltage gated channels
- » Capable of both inhibiting and activating modulators
- » Cell type specific response, ensuring targeted treatment
- » Monomeric peptide effectively inhibits ROS and inflammatory cytokines
- » Dimeric peptide blocks the hHv1 channel in both open and closed states with high affinity

FULL DESCRIPTION

Developed by researchers at the University of California, Irvine, this novel class of hHv1 polypeptide modulators selectively targets hHv1 voltage gated channels, a key player in various cellular functions. Unlike existing treatments, these modulators do not affect other voltage gated channels, providing a targeted approach to treating diseases. With applications ranging from birth control to cancer therapeutics, these modulators represent a significant advancement in medical research.

STATE OF DEVELOPMENT

Pre-clinical studies

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,084,481	09/10/2024	2019-915

CONTACT

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INVENTORS

- » Goldstein, Steven A.N.

OTHER INFORMATION

CATEGORIZED AS

- » **Materials & Chemicals**
 - » Biological
- » **Medical**
 - » Disease: Autoimmune and Inflammation
 - » Disease: Cancer
 - » New Chemical Entities, Drug Leads
 - » Therapeutics
- » **Veterinary**
 - » Other

United States Of America	Issued Patent	11,274,130	03/15/2022	2019-915
United States Of America	Published Application	20250115647	04/10/2025	2019-915

RELATED CASES

2019-915-0

RELATED MATERIALS

- » Zhao, Ruiming, et al. “Role of Human Hv1 Channels in Sperm Capacitation and White Blood Cell Respiratory Burst Established by a Designed Peptide Inhibitor.” Proceedings of the National Academy of Sciences, vol. 115, no. 50, 2018, doi:10.1073/pnas.1816189115. - 11/26/2018
- » Zhao, Ruiming et al. “Molecular Determinants of Inhibition of the Human Proton Channel hHv1 by the Designer Peptide C6 and a Bivalent Derivative.” Proceedings of the National Academy of Sciences, vol. 119, no. 23, 2022, doi: 10.1073/pnas.2120750119.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Albumin Activation of Human Voltage-Gated Proton Channels: Therapeutic Peptide Modulators

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