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

Tech ID: 32566 / UC Case 2020-678-2

BRIEF DESCRIPTION

This technology introduces novel peptide modulators of human voltage-gated proton channels (hHv1) that can be exploited for fertility treatments, and inflammatory disease management..

FULL DESCRIPTION

Researchers at the University of California, Irvine have discovered the role of albumin in activating human voltage-gated proton channels, influencing sperm capacitation and the innate immune response. This activation mechanism is pivotal in processes such as the capacitation of sperm within the female reproductive tract and the production and release of reactive oxygen species by neutrophils. Exploiting these findings, specific peptides have been developed to modulate hHv1 channels, offering new avenues for therapeutic intervention in fertility and inflammatory diseases.

SUGGESTED USES

Development of novel peptide-based therapeutics for fertility and inflammatory diseases

ADVANTAGES

Specific peptide modulators of the hHv1 proton channel offers a novel approach to therapeutics for acute and chronic inflammatory diseases and managing fertility treatments, potentially aiding in both the facilitation and prevention of fertilization

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,540,163	02/03/2026	2020-678

RELATED MATERIALS

» Zhao, R., Dai, H., Arias, R.J. et al. Direct activation of the proton channel by albumin leads to human sperm capacitation and sustained release of inflammatory mediators by neutrophils. Nat Commun 12, 3855 (2021).

STATE OF DEVELOPMENT

CONTACT

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OTHER INFORMATION

CATEGORIZED AS

» **Medical**
» Disease: Autoimmune and Inflammation
» Disease: Cancer
» Disease: Respiratory and Pulmonary System
» New Chemical Entities, Drug Leads
» Therapeutics

Pre-clinical studies

RELATED CASES

2020-678-2

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- hHv1 Polypeptide Modulators

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