Docket #: S22-508

Methods and composition to treat inflammatory eye disease

Uveitis is an intraocular inflammation in the eye and represents a major cause of visual impairment and blindness worldwide. The current standard of care for non-infectious uveitis is corticosteroids, which has frequent side effects, including steroid-induced glaucoma or cataract. To address this unmet need for alternative immunosuppressive therapies in the eye, Stanford researchers have identified a novel peptide, SEMA7A using an aptamer-based proteomics assay. This peptide comprises a binding domain for binding to its receptor Plexin C1 (PLXNC1), which in turn has a broad immunosuppressive effect in vivo, reducing the number of infiltrating neutrophils, macrophages, lymphocytes, and dendritic cells in several compartments of the eye, and affecting a wide range of inflammatory signaling pathways. The novel SEMA7A peptide has immense potential as an alternative immunosuppressive agent for ocular inflammatory diseases.

Stage of Development
In vivo testing and testing optimized versions of the peptide therapeutic.

Applications

- non-infectious uveitis

Advantages

- Broad immunosuppressive effect in vivo
- improved benefit-risk ratio compared to the current standard of care (corticosteroids)
- No negative side-effects

Patents

- Published Application: WO2024168287

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