

Neuropeptide treatment for dry eye and dry mouth syndromes

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Technology description

Summary

This technology is a combination of anti-inflammatory neuropeptides for topical treatment of dry eye and dry mouth syndromes.

Unmet Need: Non-invasive treatments for dry eye and dry mouth syndromes that address full range of symptoms

Dry eye and dry mouth syndromes are caused by a wide range of diseases and medications, and both can be potentially dangerous if left untreated. Current treatments to alleviate dry eyes and dry mouth rely on artificial tears and saliva substitutes, respectively, or, in more severe cases, surgical intervention. However, these therapies do not provide full relief or treat other related symptoms such as inflammation.

The Technology: Topical administration of neuropeptides enables direct treatment of dry eyes and/or dry mouth

This technology uses a combination of the hormones oxytocin, secretin, and vasopressin as a potential therapy for dry eye and dry mouth as well as related symptoms. It has been shown that inflammatory cytokines are elevated in tears of patients with blepharitis (inflammation of the eyelid), a leading cause of dry eye. This technology demonstrates that local delivery of oxytocin, secretin, and/or vasopressin can be used to effectively reduce the expression of inflammatory cytokines and therefore effectively treat dry eye and dry mouth. Moreover, this therapy can be combined with additional therapeutic agents such as tear substitutes or anti-histamines for added synergistic effects.

This technology has been shown to reduce inflammation in rodent models of dry eye and in in vitro cultures of human cornea or conjunctiva cells.

Application area

Topical treatment of dry eye and dry mouth

Treatment for blepharitis

Treatment for Sjogren's syndrome

Prophylactic treatment of dry eye or dry mouth caused by drug-related side effects or in premenopausal women

Combination therapy with other active pharmaceutical agents for allergy treatment

Research tool to study the inflammatory pathways in dry eye and dry mouth

Advantages

Oxytocin, secretin, and vasopressin are already available individually as drug treatments

Treatment targets underlying cause of dry eye and dry mouth syndromes

Can be locally delivered to the affected areas (eyes or mouth)

Can be formulated as either an aqueous solution or an ointment

Can be used in combination with other pharmaceutical agents

Institution

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