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METHODS TO TREAT DRY MOUTH ASSOCIATED WITH SJOGREN'S SYNDROME

THERAPEUTICS

Methods to treat Sjogren's syndrome through regeneration of the epithelial structure in salivary glands.

TECHNOLOGY TYPE

Peptide Therapeutics
Drug Delivery
Tissue Regeneration

STAGE OF DEVELOPMENT

- *In vivo* studies for both methods demonstrate improved salivary gland regulation.
Resolvin D1 also prevents upregulation of pro-inflammatory cytokine expression and lymphocytic infiltration.
- Additional studies required for translation.

IP PROTECTION

Nationalized PCT Pending in the United States and Europe

Salivary Tissue Regeneration
Using Laminin Peptide-Modified Hydrogel
US20190192739A1

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Reference Numbers: U-6145,
U-6148

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TECHNOLOGY SUMMARY

Sjogren's syndrome is a condition that causes immune cell infiltration into the salivary and lacrimal glands, leading to dry mouth and dry eyes. No cure exists and treatments only somewhat alleviate symptoms.

Two novel methods for treating, and potentially curing, Sjogren's are under development. The first uses Resolvin D1 to improve salivary gland epithelial integrity in cytokine-damaged cells through localized or systemic delivery into glands to treat dry mouth and dry eye. The second uses a fibrin-based hydrogel to regenerate salivary glands. The hydrogel is combined with functional groups, which are chemically conjugated to fluorescent FH to form new salivary tissue and eliminate dry mouth.

FEATURES AND BENEFITS

- Reduces or eliminates pain, difficulty swallowing, speech problems and other symptoms of dry mouth in Sjogren's patients.
- Promotes tissue regeneration for salivary glands.
- Lowers manufacturing cost.
- Initial studies indicate good biocompatibility.
- Provides a potential cure for Sjogren's syndrome.

RECENT PUBLICATIONS

Wang, C., Maruyama, C.L., Easley, J.T., Trump, B.G., Baker, O.J. (2017). AT-RvD1 promotes resolution of inflammation in NOD/ShiLJ mice. *Scientific Reports*, 7:45525. doi: [10.1038/srep45525](https://doi.org/10.1038/srep45525)

Nam, K., Maruyama, C.L., Wang, C.S., Trump, B.G., Lei, P., Andreadis, S.T., & Baker, O.J. (2017). Laminin-111-derived peptide conjugated fibrin hydrogel restores salivary gland function. *PLoS ONE*, 12(11): e0187069. doi: [10.1371/journal.pone.0187069](https://doi.org/10.1371/journal.pone.0187069)

INVENTOR PROFILE

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DATE UPDATED: 7/18/2019