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## **Evolution, Morphogenesis and Protein Engineering in Saliva and Salivary Glands**

**Alexandria, VA** – A symposium exploring research on the evolutionary and developmental biology of salivary glands was presented at the 54th Annual Meeting of the AADOOCR, which was held in conjunction with the 49th Annual Meeting of the Canadian Association for Dental Research, on March 12-15, 2025 in New York, NY.

Salivary glands play a vital role in maintaining balance within the oral cavity. These organs produce and secrete saliva, which plays essential roles in oral health, such as protecting oral and peri-oral tissues as well as facilitating digestion. However, various diseases can impair the structure and function of these exocrine glands, leading to hyposalivation and diminishing patient quality of life. Current treatments for hyposalivation provide only temporary symptom relief and do not address the underlying structural and functional damage to the salivary glands. Therefore, understanding the evolution, development, and regeneration of salivary glands is crucial for advancing targeted therapies aimed at promoting glandular regeneration.

The symposium delved into research on the evolutionary and developmental biology of salivary glands, with a focus on novel insights into gene function, organ architecture, and regeneration. It explored recent discoveries in gene duplications across mammalian saliva, including unique human variants, and their functional and biomedical implications for mucins and salivary amylase. It looked at the cellular communication networks involved in the development of the submandibular gland, utilizing single-cell RNA sequencing to identify novel signaling pathways that play a role in branching morphogenesis within this organ. The symposium concluded with a discussion of the role of computer-designed proteins in advancing regenerative medicine.

Organized by Harim Tavares dos Santos of the University of Missouri, Columbia, the symposium, “Evolution, Morphogenesis and Protein Engineering in Saliva and Salivary Glands” took place on Saturday, March 15 at 9:30 a.m. Eastern Time (UTC-4).

### **About AADOOCR**

The American Association for Dental, Oral, and Craniofacial Research is a nonprofit organization with a mission to drive dental, oral, and craniofacial research to advance health and well-being. AADOOCR represents the individual scientists, clinician-scientists, dental professionals, and students based in academic, government, non-profit and private-sector institutions who share our mission. AADOOCR is the largest division of the International Association for Dental, Oral, and Craniofacial Research. Learn more at [www.aadocr.org](http://www.aadocr.org).