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## **Whole Transcriptome Single Cell Spatial Sequencing in Cleft Palate Model**

**Alexandria, VA** – A study exploring in greater depth the genomic basis of palatal clefts by designing and implementing the first single-cell spatial RNA-sequencing study in a cleft palate model was presented at the 54<sup>th</sup> Annual Meeting of the AADOCR, which was held in conjunction with the 49<sup>th</sup> Annual Meeting of the Canadian Association for Dental Research, on March 12-15, 2025 in New York, NY.

The abstract, “Whole Transcriptome Single Cell Spatial Sequencing in Cleft Palate Model” was presented by Jeremie Oliver Piña of the University of Maryland at Baltimore during the “Genetic and Molecular Mechanisms of Clefting” Poster Session that took place on Thursday, March 13, 2025 at 11 a.m. EDT (UTC-4).

Despite advances in understanding the morphological disruptions that lead to defects in palate formation, the precise perturbations within the signaling microenvironment of palatal clefts remain poorly understood. To explore in greater depth the genomic basis of palatal clefts, the study implemented the first single cell spatial RNA-sequencing study in a cleft palate model, utilizing the Pax9<sup>-/-</sup> murine model that exhibits a consistent cleft palate defect.

The results of the study showcased the use of spatial transcriptomics at a single cell resolution in a well-established cleft palate model. As a key step toward laying the framework for identifying key molecular targets, these data can be used for translational studies aimed at developing effective therapies for human palatal clefts.

### **About AADOCR**

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. AADOCR represents the individual scientists, clinician-scientists, dental professionals, and students based in academic, government, non-profit and private-sector institutions who share our mission. AADOCR is the largest division of the International Association for Dental, Oral, and Craniofacial Research. Learn more at [www.aadocr.org](http://www.aadocr.org).