



Marco Tizzano Receives AChemS Ajinomoto Award for Young Investigators in Gustation or Oral Chemosensation

PHILADELPHIA (April 17, 2019) -- Monell Center physiologist Marco Tizzano, PhD, is the 2019 recipient of the Ajinomoto Award for Young Investigators in Gustation, an annual award presented by the Association for Chemoreception Sciences (AChemS) to an exceptional junior scientist who is a rising leader in the field of oral chemosensation.

Over the past 10 years, Tizzano's work has increased understanding of the functions of solitary chemosensory cells (SCCs), specialized epithelial cells located in the nose and airways. His early work revealed that SCCs function as sensors that detect potentially harmful chemicals and bacterial pathogens using many of the same receptors and cellular mechanisms as bitter taste receptors.

SCCs act as chemical sentinels, detecting and responding to irritating chemicals and bacterial by-products by triggering inflammation and protective behaviors such as avoidance. One branch of Tizzano's current research seeks to characterize how activation of SCCs by certain chemicals in the nasal passages is related to inflammation associated with asthma, rhinosinusitis, and other airway inflammatory conditions. He recently received a five-year grant from the National Institute on Deafness and Other Communication Disorders at the National Institutes of Health to support this work, which could help identify new pharmacological targets for several airway pathologies.

Other work focuses on understanding how SCC activation prompts the body to initiate defensive responses intended to dispel or destroy harmful chemicals and pathogens. Tizzano's studies are beginning to suggest potential dual effects of SCC activation: while short-term exposure to SCC activators such as bacterial signaling compounds initiate defensive responses, longer-term stimulation may be related to chronic airway inflammation. Continuing work will explore how SCCs interact with immune system defenses with the goal of translating this knowledge into novel approaches to promote health and treat mucosal inflammatory conditions.

"Marco is an extraordinarily talented scientist who has made significant contributions to what we know about this previously uncharacterized class of chemical sensor. His work adds significant depth to our understanding of chemosensory science. Looking forward, it is clear that his work will help identify new mechanisms related to inflammatory conditions and lead to the development of new therapeutic approaches," said Robert Markgolskee, MD, PhD, Director and President of the Monell Center.

Tizzano joined Monell, where he currently holds the title of Assistant Member, in 2015. He recently was named as the Center's 2018-2020 Morley R. Kare Fellow in recognition of his potential contributions to chemosensory research. Tizzano received his doctoral degree in Congenital Metabolic Pathophysiology from the University of Verona in Italy and completed postdoctoral work in at the University of Verona and the University of Colorado.