

東北大学大学院歯学研究科 インターフェイス口腔健康科学 第80回学術フォーラム

Forum for Interface Oral Health Science

The unique properties of umami taste 二宮 くみ子 先生

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大会議室 (C棟 1階)

We know since ancient times that there are four basic tastes, sweet, sour, salty and bitter because they are clearly recognizable. Umami, in the contrary, was not discovered until 1908 when Professor Kikunae Ikeda identified glutamate as the molecule responsible for the taste of kombu dashi and named this taste umami. It took almost another century for a group of Japanese researchers to clearly demonstrate that umami is the 5th basic taste. Today, it is accepted that umami is independent to the other 4 basic tastes. Taste nerves respond specifically to glutamate and other umami compounds such as the nucleotides 5'-inosinate monophosphate (IMP) and 5'-guanylate monophosphate (GMP). IMP and GMP act synergistically with glutamate by markedly increasing the perception of the glutamate taste. Taste cells express G-protein coupled receptors that have a specific affinity for glutamate, taste receptor heterodimer T1R1+T1R3, and the metabotropic glutamate receptors mGluR1 and mGluR4. Umami is very subtle. Many foods contain free glutamate, but there are few pure umami foods like kombu dashi. Glutamate also increases the flavor characteristics of foods, continuity, mouthfulness, and thickness. In this seminar, participants will learn more about these properties.

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