

Alterations of Taste Sense and Preference by Salty Food : In Vivo Imaging of Taste Buds

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Summary

The sense of taste can be altered by high-salt intake, which may in turn affect food consumption. To assess this hypothesis, we performed behavioral observation and quantitative PCR in mice treated with high salt water (SW). Two-bottle preference tests revealed that SW mice had reduced ability to perceive sweet, umami and bitter tastes compared with the mice treated with normal water (NW). Notably, this was seen at 2-week of SW treatment, indicating that the direct effect of SW on taste perception. Analysis of taste-related mRNA expression indicated that down-regulation of taste receptors such as T1R1, T2R2 and T2R3 contribute to the degradation of taste sensation in sweet and umami. We are currently performing two-photon microscopy of intact taste-buds to examine if degradation of taste perception can be visualized in taste-bud levels. Further mechanical evidence will be provided in future studies.