

# Wasabi receptor can sense ammonia that causes pain

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Japanese research group, led by Prof Makoto Tominaga of National Institute for Physiological Sciences in Japan, found that the receptor for hot taste of WASABI, Japanese horseradish usually eaten with Sushi, can sense alkaline pH caused by base such as ammonia. The team reports their finding in *Journal of Clinical Investigation* on November 13, 2008.

Clinically, alkaline pH is known to cause pain but the mechanism has been not known. By electrophysiological experiments, the team found that the WASABI receptor, namely transient receptor potential (TRP) A1 receptor, can be activated by alkalization inside of cells by application of base such as ammonia. Administration of such base to the foot of mice caused transient pain-related behaviors. However, it did not in TRPA1 deficient mice.

"It has the first report showing molecular entity for the alkali-sensor. You could feel pain when you eat too much WASABI with Japanese Sushi. We found that this pain sensation is the same with that caused by ammonia", said Prof Tominaga.

Source: National Institute for Physiological Sciences

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