

The Proton Channel OTOP1 is a Sensor for the Taste of Ammonium Chloride

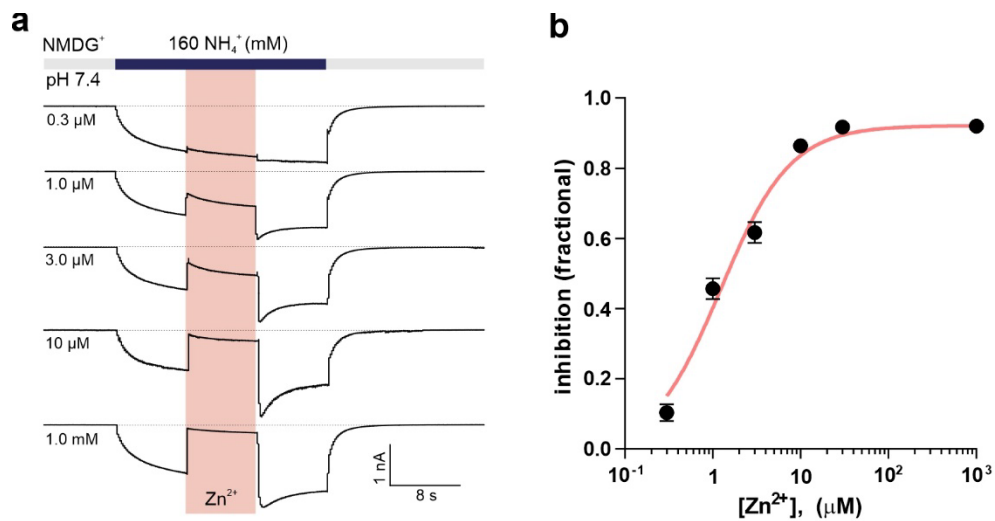
Ziyu Liang^{1,2,*}, Courtney E. Wilson^{3,*}, Bochuan Teng^{1,2,4}, Sue C. Kinnamon³ and Emily R. Liman^{1,#}

1. Section of Neurobiology, Department of Biological Sciences, University of Southern California, Los Angeles, CA, 90089, USA.
2. Program in Neuroscience, University of Southern California, Los Angeles, CA, 90089, USA.
3. Department of Otolaryngology, University of Colorado Medical School, 12700 E 19(th) Avenue, MS 8606, Aurora, CO 80045, USA.
4. Present address: Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, USA.

*These authors contributed equally

Correspondence: liman@usc.edu

Supplementary Material



Supplementary Figure.1 Dose-dependent inhibition of NH₄Cl-induced current in mouse OTOPI by Zn²⁺.

(a) Representative trace of currents in mouse OTOPI expressing HEK-293 cells elicited in response extracellular 160 mM NH₄Cl were inhibited in a dose-dependent manner by Zn²⁺ (pink bar, concentrations indicated as in the figure). **(b)** Average data from experiments as in (A) (mean $\pm$ SEM). The data were fit with a Hill equation with an IC₅₀ of 1.3 μ M and a Hill coefficient of 1.1. $n = 2$ cells for 10 μ M, $n = 3$ cells for 30 μ M, $n = 7$ cells for 0.3 and 3.0 μ M, $n = 8$ for 1.0 μ M and 1 mM.

Supplementary Table 1

Oligonucleotides		
Whole exon 1 genotyping forward: GGAGCCAGGAGCAACGTGC	IDT	N/A
Whole exon 1 genotyping reverse: CTGCTCAGAGTCTCCGCCAGC	IDT	N/A
WT-specific allele genotyping forward: TGGAGGAGAGCAGGATCTGAGG	IDT	N/A
WT-specific allele genotyping reverse: AGTCTCCGCCAGCTTCTGCG	IDT	N/A
Mutant (-38)-specific allele genotyping forward: TGGAGGAGAGCAGGATCTGAGG	IDT	N/A
Mutant (-38)-specific allele genotyping reverse: GTCTCCGCCAGCTTCTGGA	IDT	N/A
mOTOP1 K187A mutation forward: CTGGGGCCATGCTGCTGATATCATCATG	IDT	N/A
mOTOP1 K187A mutation reverse: GATGATATCAGCAGCATGGCCCCAGAGG	IDT	N/A
mOTOP1 R292A mutation forward: GAACATCGGGGCCAGAGTGGAC	IDT	N/A
mOTOP1 R292A mutation reverse: CCACTCTGGCCCCGATGTTC	IDT	N/A
mOTOP1 K527A mutation forward: CAGGGCGGCATGGCCAGGAGGCTTC	IDT	N/A
mOTOP1 K527A mutation reverse: CCTCCTGGCCATGCCGCCCTG	IDT	N/A
mOTOP1 R528A mutation forward: GCATGAAGGCCAGGCTTCTCAG	IDT	N/A
mOTOP1 R528A mutation reverse: GAAGCCTGGCCTTCATGCCGCCCTG	IDT	N/A