

SUPPLEMENTARY FIGURE LEGENDS

Supplementary Fig. 1. Effect of GalA-MRPs on Bz-insensitive NaCl CT responses in P and NP rats. Shows representative CT responses in a NP rat and a P rat maintained on H₂O (Group 2; Table 1) while their tongues were first stimulated with the rinse solution R and then with N+Bz+GalA-MRPs (0-1%). GalA-MRPs (0-1%) did not elicit a CT response in R (Katsumata et al. 2008). The CT responses were normalized to the mean tonic CT responses to 0.3 M NH₄Cl obtained in each P and NP rat.

Supplementary Fig. 2. Detection of TRPM5, α -gustducin and TRPV1/TRPV1t in isolated taste buds and non-gustatory epithelium using RT-PCR. cDNA made from C57BL/6J WT mice (Group 12; Table 1) fungiform taste buds (FF TBs), circumvallate taste buds (CV TBs) and the non-gustatory lingual epithelium devoid of taste buds (NG Epi) was screened for TRPM5 (**A**), α -gustducin (**B**) and TRPV1 (**C**). All transcripts were found with bands of expected sizes (DNA ladder on *left* side in each panel) in the FF and CV taste buds but were not detected in the NG Epi. Negative (-) control was milliQ water. The cDNA from testis (T) was used as a positive control for TRPV1. In addition, cDNA from the isolated CT nerve was used as a negative control for TRPM5 (**A**) and α -gustducin (data not shown). Beta-actin was found in all tissues (data not shown).

Supplementary Fig. 3. T1R3 and TRPV1/TRPV1t protein levels in the intestinal mucosal cells in P and NP rats maintained on H₂O. The figure shows the data from Western blot experiments for T1R3 and TRPV1/TRPV1t in intestinal mucosal cells in 3

P rats and 3 NP rats maintained on H₂O (Group 2; Table 1). The bars represent the density of T1R3 and TRPV1/TRPV1t bands computed relative to the density of β -actin. The p values represent the unpaired comparison between the two groups.

Supplementary Fig. 4. Effects of chronic sucrose exposure on Bz-insensitive NaCl CT nerve responses in P and NP rats. CT responses were measured while the rat tongue was stimulated with R and then with N+Bz+RTX ($0-10 \times 10^{-6}$ M) in NP **(A)** or P **(B)** rats maintained on H₂O (\circ) (Group 2; Table 1) or exposed to chronic 5% sucrose (\blacktriangle) in a no choice paradigm (Group 3; Table 1). In each animal the tonic CT response was normalized to the corresponding tonic CT responses obtained with 0.3 M NH₄Cl. The zero RTX concentration is shown as -8.0 on the X-axis. The gray vertical bars represent points at RTX concentration in μ M. The RTX-NaCl+Bz CT response relationship in naïve NP or P rats first shown in Figs. 3B (\circ) and 4A (\circ), respectively are also plotted for comparison.

Supplementary Fig. 5. Effect of TRPV1t inhibition on Bz-insensitive NaCl CT responses. CT responses were monitored in WT and TRPV1 KO mice (Group 12; Table 1) while the tongue was stimulated with the rinse solution R and then with N+Bz and N+Bz+TRPV1t agonist (0.25% GalA-MRPs, 1×10^{-6} M RTX or 30% ETOH). In each case the tonic CT responses were normalized to the corresponding tonic CT responses obtained with 0.3 M NH₄Cl. Each bar represents the mean \pm SEM values of the normalized tonic CT response from 3 mice.

Supplementary Fig. 6. (A) Effect of U73122 on the CT responses to SC45647 in the absence and presence of ethanol. CT responses were measured in SD rats while the rat tongue was first stimulated with the rinse solution R and then with R+0.005M SC45647 in the presence of 0 or 30% ETOH under control conditions (Control) and after topical lingual application of 150×10^{-6} M U73122 (Post-U73122). In 3 animals (Group 11; Table 1), in the presence of U73122 the tonic CT response to SC45647 was not different from the baseline ($p > 0.05$) and also inhibited the further increase in the CT response in the presence of ETOH. **(B) Effect of BAPTA-AM loading on the CT response to sucrose in the absence or presence of ethanol.** CT responses were monitored in SD rats while their tongues were stimulated with a rinse solution and then with 0.5 M sucrose solution containing 0 or 30% ethanol (ETOH) before and after topical lingual application of 33×10^{-3} M BAPTA-AM (Table 2). In 3 animals (Group 11; Table 1), after BAPTA treatment, there was no statistical difference between the CT response to sucrose and sucrose+ETOH ($p > 0.05$).