

The cell biology of taste

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An incorrect receptor dimer appeared in Fig. 1 of this Review. The corrected Fig. 1 is shown below.

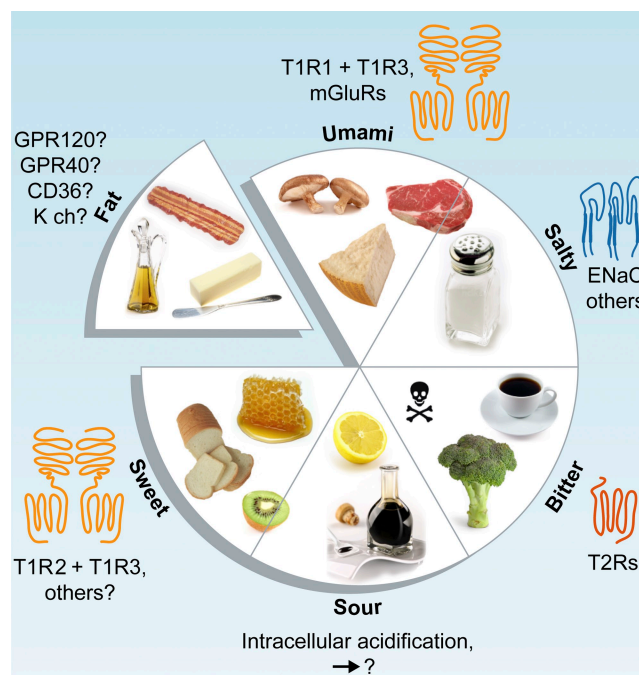


Figure 1. Taste qualities, the taste receptors that detect them, and examples of natural stimuli. Five recognized taste qualities—sweet, sour, bitter, salty, and umami—are detected by taste buds. Bitter taste is thought to protect against ingesting poisons, many of which taste bitter. Sweet taste signals sugars and carbohydrates. Umami taste is elicited by L-amino acids and nucleotides. Salty taste is generated mainly by Na⁺ and sour taste potently by organic acids. Evidence is mounting that fat may also be detected by taste buds via dedicated receptors. The names of taste receptors and cartoons depicting their transmembrane topology are shown outside the perimeter. Bitter is transduced by G protein-coupled receptors similar to Class I GPCRs (with short extracellular N termini). In contrast, sweet and umami are detected by dimers of Class III GPCRs (with long N termini that form a globular extracellular ligand-binding domain). One of the receptors for Na⁺ salts is a cation channel composed of three subunits, each with two transmembrane domains. Membrane receptors for sour and fat are as yet uncertain.