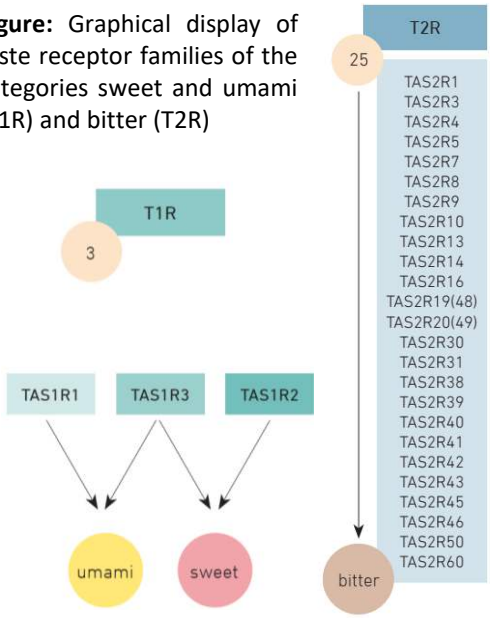


The power of bitter substances

The human sense of taste, expresses a total of **three receptors for the recognition of umami and sweet**, whereas a total of **25 receptors are currently known for bitter**. In the last few years, it was discovered that bitter substance receptors (T2R) are localized not only in the taste cells of the tongue and oral cavity but also in the entire gastrointestinal tract and in almost all extraintestinal organs. There they have different biological functions depending on the cell type

Figure: Graphical display of taste receptor families of the categories sweet and umami (T1R) and bitter (T2R)



Regulation of hunger and satiety

The bitter receptors are involved in the **regulation of glucose metabolism** and in the secretion of so-called appetite hormones such as ghrelin, which indicates hunger, or cholecystokinin (CCK), which **controls satiety and bowel emptying**. Among other things, the T2Rs inhibit the contraction of smooth muscle in the gastrointestinal tract. As a result, food remains in the intestine longer, maintaining the feeling of satiety. Even in a fasting state, the ingestion of bitter substances **influences the feeling of hunger** and can thus indirectly reduce calorie intake. Two smaller clinical studies suspected that the effect is due to an inhibition of the release of motilin and ghrelin.

References:
Jeruzal-Świątecka, J. et al. 2020. Int J Mol Sci. 21(14):5156. ▪ Lu, P. et al. 2017. J Gen Physiol. 149(2):181–197. ▪ Raka, F. et al. 2019. Am J Physiol-Endocrinol Metab. 317(4):E559-E572. ▪ Deloose, E. et al. 2017. Am J Clin Nutr. 105(3):580-588. ▪ Deloose, E. et al. 2018. Neurogastroenterol Motil. 30(1):e13171.

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BIOGENA BitterMagic®

9 traditional bitter plants in 3 innovative bitter blends with standardized **oleuropein**, **cynarin**, **silymarin** and **gingerol**.

✓ Supports **appetite regulation** and improves the **perception of satiety**

✓ Stimulates the flow of bile in **dyspeptic complaints**

Biogena GmbH & Co KG
Strubergasse 24, A-5020 Salzburg, info@biogena.com, www.biogena.com