

Papillae (Taste Bud Cells)

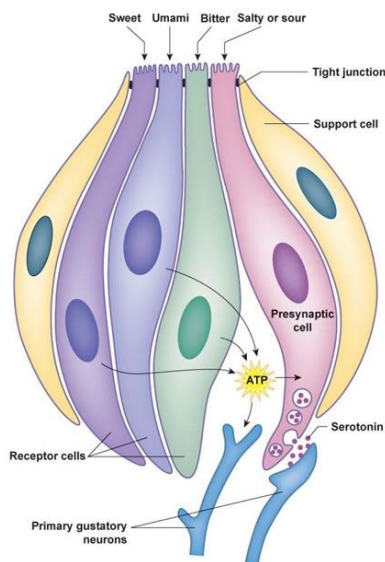
By Katie Anderson

Papillae is the few thousand bumps that line your tongue. Each papilla houses circular structures of 50 to 100 taste cells folded together like the petals of a flower—taste *buds*. These cells have chemical receptors attuned to the five basic tastes—bitter, sweet, sour, and salty. Each taste bud has a pore that opens out to the surface of the tongue enabling molecules and ions taken into the mouth to reach the receptor cells inside. Over time, our bodies created these receptors to help us detect when something doesn't taste right. If our receptors taste something wrong, our first instinct is to spit it out. That's because if our brain doesn't recognise something as food, it'll recognise it as something we shouldn't ingest.

These receptors are capable of comprehending tastes because they're covered in nerves that send signals to the brain. The nerves are broken up into different sections to send different

signals (Back of the cell = bitter, second to the back = sour, middle of the cell = sweet, tip of the cell = salty). The structure is similar to assorted files in a tight cabinet. Once a certain food enters your mouth, a receptor shrivels up and the brain senses it.

The cells are eukaryotic, meaning they're complex with many organelles, and constantly processing and adjusting. Out of the multiple organelles taste buds have, the nucleus is the largest in the cell. This is because the cell is doing a lot of communication with the brain, and nucleus is the most capable of neural interaction. The cell membrane is in charge of keeping homeostasis (keeping stable equilibrium between interdependent, systematic elements). The taste buds cell membrane makes sure that it's system is stable and equal enough to run properly. Because of this stability, the cells are even and are given enough space for the receptors to work independently.



Taste Bud Cell (Diagram)



Taste Bud Under Microscope

