

TASTE RECEPTORS

TASTE BUDS

Taste buds contain taste receptor cells, which are also known as gustatory cells.

TASTE RECEPTORS

The taste receptors are located around the small structures known as papillae. These structures are involved in detecting the five elements of taste perception: salty, sour, bitter, sweet and umami.

TASTE PROCESSING

Via small openings in the tongue epithelium, called taste pores, parts of the food dissolved in saliva come into contact with the taste receptors. The taste receptor cells send information detected by clusters of various receptors and ion channels to the gustatory areas of the brain.

PAPILLAE

The taste buds on the tongue sit on raised protrusions of the tongue surface called papillae.

BUD

The bud is formed by two kinds of cells

1. Supporting cells
2. Gustatory cells

1. SUPPORTING CELLS

The supporting cells form an outer envelope for the bud. Some, however, are found in the interior of the bud between the gustatory cells.

2. GUSTATORY CELLS

The gustatory cells, a chemoreceptors occupy the central portion of the bud; they are spindle shaped, and each possess a large spherical nucleus near the middle of the cell.

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OLFACTORY RECEPTOR

Olfactory receptor, also called smell receptor, protein capable of binding odour molecules that plays a central role in the sense of smell (olfaction).

OLFACTORY RECEPTOR CELLS

The receptors are located on olfactory receptor cells, which are present in very large number (millions) and are clustered within a small area in the back of the nasal cavity, forming an olfactory epithelium.

CILIA

Each receptor cell has a single external process that extends to the surface of the epithelium and give rise to number of long, slender extensions called cilia.

MUCUS

The cilia are covered by the mucus of the nasal cavity, facilitating the detection of and response to odour molecules by olfactory receptors.

OLFACTORY BULB

The olfactory bulb of the brain processes information from the olfactory receptors lining the nose.

TOUCH

MECHANORECEPTORS

Pressure, touch and stretch receptors are mechanoreceptors which are sensitive to mechanical stimuli displacing the tissue in which they are located.

LAMELLATED CORPUSCLES

Lamellated corpuscles are rapidly adapting receptors used to detect deep pressure and stretch. They are located deep in the dermis, as well as in the ligaments and tendons associated with joints.

NERVE ENDINGS

There are several types of receptors that function in the skin as touch receptors. Free nerve endings extend from the dermis superficially to the spaces between the epidermal cells. These endings function primarily as pain receptors but also serve to detect touch, itch and temperature.

TACTILE (MEISSNER) CORPUSCLES

Meissner corpuscles in the superficial dermis are ~~associated with~~ most abundant in hairless areas such as fingertips, palms, and lips. These rapidly adapting receptors are useful in detecting the onset of light touch to the skin.

NOCICEPTOR

A nociceptor is a sensory neuron that responds to damaging or potentially damaging stimuli by sending "possible threat" signals to the spinal cord and the brain. If the brain perceives the threat as credible, it creates the sensation of pain to direct attention to the body part, so the threat can hopefully be mitigated; this process is called nociception.

EXTERNAL NOCICEPTORS

External nociceptors are found in ~~any~~ ~~area~~ ~~of~~ tissue such as the skin (cutaneous nociceptors), the corneas, and the mucosa.

INTERNAL NOCICEPTORS

Internal nociceptors are found in a variety of organs, such as the muscles, the joints, the ~~pan~~ bladder, the gut, and the digestive tract.