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With the aid of a diagram, write an essay on the histology of corti

The organ of Corti is a specialized sensory epithelium that allows for the transduction of sound vibrations into neural signals. The organ of corti itself is located on the basilar membrane. The organ of corti rests on the basilar membrane and contains two types of hair cells:

- Inner hair cells
- Outer hair cells

Inner hair cells transduce sound from vibrations to neural signals through the shearing action of their stereocilia.

Outer hair cells serve a function as acoustic pre-amplifiers which improve frequency selectivity by allowing the Organ of corti to become attuned to specific frequencies, like those of speech or music.

The fibrous tectorial membrane rests on top of the stereocellia of the outer hair cells. Mutations in a alpha-tectorin, which encodes a protein specific to the tectorial membrane, causes deafness

- The inner hair cells are connected to type I neuron peripheral fibres of spiral ganglion, these connection are very divergent The luminal part of the cell is emmersed in endolymph, the

basal one is immerged in normal extracellular fluid. The luminal portion is formed by bundles of stereocilia whose tips are connected by filamentous structures called tip links

- Outer hair cells are connected to type II aferent nerves, the connections are very convergent - They have also an afferent from superior olivary nucleus. They have contractile activity
- Supporting cells are four different types

Corti pillars

Hensen cells

Deiters cells

Claudius cells