

## Role of vimentin in the hearing organ

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Vimentin is a protein of intermediate filaments present in mesodermal and neuronal precursor cells that is expressed from the eighth day in the mouse embryo. This intermediate filament protein plays a significant role in supporting and anchoring the position of organelles in the cytosol as well as in maintaining cell shape and stabilizing the cytoskeletal interactions. Recently, Johnen and his colleagues showed a partial loss of E-cadherin and  $\beta$ -catenin and a temporary appearance of vimentin in pillar and Deiters cells between the eighth and the tenth day after birth. These observations suggest that a partial EMT might be involved in the remodeling of the organ of Corti during postnatal stages development.

To determine the role of vimentin in the inner ear development, we first analysed the spatio-temporal pattern of vimentin expression. We showed that this protein is expressed in the spiral ganglion, the epithelium of the organ of Corti and in the stria vascularis.

Using a vimentin null mice, we showed also on semithin sections that the morphology of the organ of Corti during postnatal development and at the adult stage seemed to be normal. Contrary to previous data made on the sciatic nerve, we find also no difference in the myelination of the spiral ganglion neurons, either the structure or the thickness of the myelin sheath.

At present, our first results do not seem to indicate that vimentin plays a major role in the development of the hearing organ. Further experiments are now needed to know the function of this cytoskeletal protein in the sensory organ.

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