

论著

蛋白酶TMPRSS3在小鼠耳蜗中的表达分析

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摘要:

目的:观察跨膜丝氨酸蛋白酶3(transmembrane protease, serine 3,TMPRSS3)在小鼠耳蜗组织中的表达与分布,分析不同年龄阶段耳蜗 *TMPRSS3* mRNA表达情况,初步探讨内耳蛋白酶TMPRSS3的作用。方法:采用免疫组织化学结合免疫荧光双标技术观察C57/BL小鼠耳蜗组织TMPRSS3蛋白表达分布,解剖耳蜗、耳蜗螺旋神经元、Corti器、血管纹组织,采用实时荧光定量PCR检测上述组织细胞中TMPRSS3的表达情况,依次取不同年龄组小鼠耳蜗标本,实时荧光定量PCR检测各年龄组耳蜗 *TMPRSS3* mRNA表达的变化。结果:蛋白酶TMPRSS3主要表达分布在耳蜗螺旋神经元中,耳蜗Corti器、血管纹组织细胞中也有TMPRSS3阳性表达;各年龄阶段小鼠耳蜗均存在 *TMPRSS3* mRNA表达,但其整体表达水平相对较低。结论:耳蜗多处部位存在蛋白酶TMPRSS3的表达,但其表达主要分布在耳蜗螺旋神经元中,提示TMPRSS3的作用可能主要体现在维护听觉螺旋神经元的生理功能方面。

关键词: 跨膜丝氨酸蛋白酶3 II型跨膜丝氨酸蛋白酶 耳蜗 螺旋神经元

Expression of proteinase TMPRSS3 in mouse cochlea

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Abstract:

Objective To observe the expression of proteinase transmembrane protease, serine 3 (TMPRSS3) in mouse cochlea, and to investigate the significance of TMPRSS3 in the inner ear. Methods The protein expression of TMPRSS3 in C57/BL mouse cochlea was identified and detected by immunohistochemistry and immunofluorescence. Different cochlear tissues, such as spiral ganglion neurons, corti organ, stria vascularis and so on, were separated to detect the gene expression of *TMPRSS3* by real-time fluorescence quantitative polymerase chain reaction (qPCR). The cochlear tissues with different ages were collected and the expression of *TMPRSS3* mRNA was detected by qPCR. Results TMPRSS3 was mainly expressed in the spiral ganglion neurons, and there was *TMPRSS3* mRNA in the cochlea in groups with different age. The expression level of *TMPRSS3* mRNA was much weaker. Conclusion The distribution of TMPRSS3 was observed in many regions of the mouse cochlea, but mainly in the spiral ganglion neurons. This indicates that TMPRSS3 may be involved in the physiological functional regulation of the spiral ganglion neurons.

Keywords: transmembrane protease, serine 3 type II transmembrane serine protease cochlea spiral ganglion neuron

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