



*Title:* Real-time PCR of trigeminal receptor mRNAs in human nasal biopsies

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*Abstract*

**Background:** Previous research suggests that chemosensory stimuli mediated by branches of the trigeminal nerve are perceived differentially dependent on the location within the nasal cavity.

**Aim:** The aim of this study was to acquire data on the occurrence of various trigeminal receptor mRNAs in different locations of the nasal mucosa using real-time PCR.

**Subjects & Methods:** Biopsies of 12 healthy individuals (mean age: 37.8 years) were taken from the insertions of the middle and inferior turbinates, as well as anterior ventral and posterior dorsal septum. Real time-PCR was performed using primers for TRPA1 (ankyrin-like receptor with transmembrane domain I), ACCN3 (acid-sensing ion channel), TRPV1 (transient receptor potential vanilloid receptor 1), TRPM8 (transient receptor potential receptor M8), and CALCB1 (calcitonin gene-related product). As housekeeping gene, HMBS was used. All primers were positively tested in a human trigeminal ganglion.

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**Results:** Strongest expression was shown for TRPV1 and ACCN3 in septal regions of male individuals, TRPM8 was not detected. TRPA1 mRNA was most strongly detected in anterior septal areas of female subjects. Younger subjects presented stronger receptor mRNA expressions than older ones.

**Conclusions:** Present data of this small group did not reveal a significant coherence between expression of trigeminal receptor mRNAs and specific locations in the nasal cavity.