

## Gene transcription and translation of MMPs, TIMPs, and RECK during mouse craniofacial development

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Our objective was to analyse the spatial-temporal distribution of MMP-2, MMP-9, TIMP-1, TIMP-2 and RECK, during mouse craniofacial development. Heads (n=5/period) were collected from fetuses (E13-E20) and 1 day postnatal (PN1) and processed to immunohistochemistry and *in situ* hybridization. During mandible and maxillae intramembranous ossification, osteoblasts were immunostained for MMPs (early stage), TIMPs (late stage) and RECK. In Meckel cartilage degradation, MMPs, RECK and TIMPs mRNA and protein were found in perichondrial cells. During odontogenesis, RECK was immunostained in migrating epithelial cells in bud stage, enamel inner epithelial cells in cap stage, and in ameloblasts and odontoblasts in bell stage. RECK mRNA was found diffuse in all tooth germ in cap stage, more localized in primary enamel knot in early bell stage, and in ameloblasts and odontoblasts in late bell stage. The alveolar bone was immunolabelled in all periods. Our results support that RECK is expressed by odontogenic, osteogenic and chondrogenic cells and MMPs, TIMPs, and RECK were differentially expressed during the mouse intramembranous ossification and odontogenesis, suggesting that they may play an active role in ECM remodeling control.

**Keywords:** MMP, TIMP, RECK, Intramembranous Ossification, Odontogenesis and Meckel Cartilage.

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