

## Expression of p63 transcription factor in ectoderm-derived oral tissues

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*Key words:* p63, tooth germ, oral mucosa, ectoderm, stem cell, human, immunohistochemistry

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### SUMMARY

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The p63 gene encodes six splice variants expressed with transactivating or dominant-negative activities. Animal studies with p63 *-/-* mutants have suggested that p63 is important for proper development of several organs, including tooth and salivary gland. Moreover, mutations of p63 have been detected in patients affected by ectrodactyly, ectodermal dysplasia and facial clefts. To clarify the role of p63 in craniofacial development, we have studied the localization of p63 protein in human and rat oral tissues using immunohistochemistry. p63 immunostaining was identified in the enamel organ, oral epithelium and developing salivary glands. All compartments of the enamel organ were immunolabelled, whereas only basal and some suprabasal cells of the oral epithelium were stained. Ectomesenchyme-derived cells, including pulp cells, odontoblasts, bone cells and chondrocytes, were negative. The staining pattern was identical in human and rat tissues. These data lend support to the hypothesis that p63 is involved in growth and differentiation of ectoderm-derived oral tissues and may be useful to clarify molecular and developmental aspects observed in animal knock-out experiments and human syndromes related to p63 gene alteration.

### INTRODUCTION

p63, a gene at 3q27-29, is a recently discovered member of the p53 family (Schmale and Bamberger, 1997; Osada et al., 1998; Trink et al., 1998; Yang et al., 1988). While p53 is ubiquitously expressed, p63 has been shown to be expressed specifically in embryonic ectoderm and in regenerative compartments of some adult epithelia, including oral epithelium (Parsa et al., 1999; Nylander et al., 2002). Abrogation of p63 gene function in p63 *-/-* mutant mice has provided convincing evidence that p63 plays an important role in proper development of ectoderm-derived