Title:	Differential expression of stem cell-like proteins in normal, hyperplastic and dysplastic oral epithelium
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Abstract:	Objective: The identification of stem cells (SC) remains challenging. In the human oral mucosal epithelium, these cells are believed to be in the basal layer (stem cell niche), but their exact location is unclear. The aim of this study was to examine the dysplastic oral epithelium for these SC-like proteins in order to assess their diagnostic value as biomarkers complementing the histological grading of dysplasia. Material and Methods: Thirty oral epithelial dysplasia (OED), 25 oral lichen planus (OLP), 10 oral hyperkeratosis and 5 normal oral epithelium (OE) were immunohistochemically examined for four SC markers [integrin beta 1, neuron-glial-2 (NG2), notch 1 (N1) and keratin 15 (K15)]. Results: Three of four SC markers were heterogeneously detected in all samples. K15 overexpression in the lower two-thirds of severe OED suggests an expanded SC niche. Integrin beta 1 distribution pattern was not measurably different between OEDs and control. NG2 was almost

	negative to absent in all samples examined. N1 expression was weak and highly variable in normal and dysplastic epithelium, making it an unreliable epithelial stem cell marker. Conclusions: Present findings suggest that these markers were unable to identify individual epithelial stem cells. Instead, subpopulations of cells, most probably stem cells and transit amplifying cells with stem cell-like properties were identified in the dysplastic oral epithelium. The characteristic expressions of K15 might be of diagnostic value for oral dysplasia and should be investigated further.
Keyword:	stem cells; integrin beta 1; notch 1; keratin-15; dysplasia; monoclonal-antibody; ng2 proteoglycan; keratinocytes; skin; progenitors; maturation; phenotype; carcinoma; disease; gene
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