

REVIEW ARTICLE

Cytokeratin changes in cell culture systems of epithelial cells isolated from oral mucosa: a short review**Alberto Gasparoni, Christopher Alan Squier ° and Luciano Fonzi**

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Key words: oral epithelial cells, Ca⁺⁺-induced differentiation, cytokeratin, Involucrin, cell cultures

SUMMARY

In the past three decades, many studies have analyzed ultrastructural and molecular markers of differentiation in squamous stratified epithelial tissues. In these tissues, epithelial cells migrating from the basal layer to the upper layers undergo drastic changes, which involve membrane-associated proteins, DNA synthesis, phenotypic aspects, lipid composition, and cytoskeletal components. Cytoskeletal components include a large and heterogeneous group, including intermediate filaments, components of the cornified envelope, and of the stratum corneum. When grown in mono- and multilayer cell cultures, epithelial cells isolated from the oral mucosa may reproduce many of the biochemical and morphological aspects of epithelial tissue *in vivo*. In the present paper, we examine phenotypic changes, development of suprabasal layer, and Involucrin expression occurring in differentiating oral epithelial cells, based on literature review and original data.

INTRODUCTION

In the oral cavity, three types of epithelial tissue differentiation are present. These include keratinizing, non-keratinizing and specialized epithelia. The first two types of epithelia are made up of different cell layers, resting on the basement membrane. The two types of epithelia differ for anatomical localization, morphological aspects, and biochemical properties. Only some of these characteristics can be reproduced *in vitro*. For clarity, some of the biochemical and morphological changes observed *in vivo* will be summarized here.