

The following informations on your paper:

Title: Mr

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Abstract: Abstract Structural and functional interrelationships between odontoblast (OCL) and sub-odontoblast cell layers (SOCL) are relevant to tissue formation and regulation in health and disease, but are incompletely understood. This study employed contemporary immunohistochemical techniques to gain important new insights on tissue complexity within the apical half of the rodent mandibular incisor. Whole incisors were removed from freshly killed Wistar rats, fixed in 4% paraformaldehyde, demineralized, and prepared for standard immunohistochemistry. Tissues were labelled with primary antibodies to vimentin, α actin, NaKATPase, alpha tubulin and COX 1, and secondary antibodies alexafluor 488 and 594, before examination by fluorescence microscopy. Odontoblasts presented in stratified or pseudo-stratified arrangements, rather than simple columnar form. Additional stellate cells, α -actin immunoreactive, were observed predominantly in the distal half of the OCL. Cells in the cell rich zone (crz) also showed complexity, with high cell density, and cells presenting with large nuclei and sparse cytoplasm. These cells showed intense NaKATPase immunoreactivity. Some of these cells sent processes towards and into the OCL, whilst other processes remained within the crz. No processes directed downwards. The OCL of the rat mandibular incisor presents a hitherto undescribed complexity, in terms of cellular arrangement and composition, the functional significance of which is not immediately apparent. The observation that cellular processes from crz to the OCL and lateral processes within crz suggest functional connectivity and cell to cell communication within the layer. The intense immunoreactivity to NaKATPase suggests functional specification and a high degree of tissue activity. Structural observations will require further investigations.

Keywords: Odontoblast, Pulp biology, Fibroblast, Cell biology, Complexity, Cell signalling.

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