

The process of tooth formation and development is complex involving many signalling pathways and molecules. The enamel formation is a process controlled entirely by the enamel organ with many cell-cell interaction and signalling. Although this process was studied extensively, the full understanding is still to be achieved. Twenty dental pulps from rat mandibular incisor were dissected, fixed, frozen, sectioned, stained with specific antibodies then carefully examined using fluorescence microscope. The basic findings were cellular heterogeneity, presence of spherical vacuoles which may be blood vessels, and striking differential expression of some very important signalling molecules antigen throughout the enamel organ at different stages of development. This paper revealed some of the complexity associated with amelogenesis and proved that the previous description of enamel organ is very simplistic.