

Melatonin localization in serous cells of human salivary glands

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The presence of melatonin in human saliva and its beneficial effects in the oral cavity have been extensively demonstrated, but little is known about the route by which it enters saliva. Although it is commonly believed that blood melatonin crosses the salivary cell membranes and reaches saliva by passive diffusion, its intracellular route remains unexplored. This study was carried out to provide ultrastructural evidence for the melatonin presence in human salivary glands and to suggest a plausible mechanism for its secretion. Surgical samples of parotid, submandibular and labial glands removed from 15 consenting patients were routinely processed for electron microscopy. Thin sections were treated to demonstrate melatonin localization by the immunogold postembedding method. Melatonin positivity was found in secretory granules of serous cells, testifying the capacity of salivary gland cells to store the hormone within cytoplasmic compartments and to release it into the oral cavity in response to a variety of stimuli. Moreover, immunoreactivity was quantified by counting the gold particles per surface unit, showing the strongest labeling in parotid gland, which probably is the most involved in melatonin release.

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Keywords

Melatonin; human salivary glands; immunogold.