PROJECT RESUME

In multicellular organisms, epithelia play a fundamental role, providing a protective barrier against the external environment while allowing the free exchange of metabolites and waste products. To maximise the area of surfaces, epithelia are often organised into highly complex branched epithelia. In salivary glands the epithelium is organised into a branched network of ducts ending into saliva secreting acinar cells. The integrity of these cells is often impaired in 27% of the elderly leading to hyposalivation and consequent dental and digestive disorders. Understanding how salivary glands are formed during development can provide therapeutic strategies for organ regeneration. However, it still remains unclear how salivary glands are organised into a highly branched epithelium. Do salivary glands follow an intrinsic deterministic pathway or a more extrinsic stochastic programme? This project aims to use statistical and experimental approaches to resolve the pattern of branching morphogenesis in salivary glands.

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