

Understanding the dry mouth syndrome - a model of saliva secretion

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Saliva secretion is important for chewing, speaking and general oral health. A lack of saliva can cause problems and in order to understand how these problems occur, we develop a mathematical model of the cellular mechanisms underlying saliva secretion. These mechanisms include various ion channels, pumps and cotransporters. Their concerted actions cause water flow through the cell. An extremely important factor in the cause of water flow is the dynamics of cellular calcium and its regulation of the ion channels. Experimental data of the calcium concentration changes will be presented along with a brief description of the methods used to obtain this data. I will then talk about some new experimental techniques used to obtain more informative data and how we will attempt to model the data.