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Chemotactic Signalling in A. punctulata Sperm.

We develop a system of ODEs to model the change in calcium concentration in *A. punctulata* sperm flagella in response to chemotactic signalling. The change in calcium concentration is dependent on membrane voltage, which is in turn dependent on ion channel mechanics. We assume the ion channels can be modeled using Hodgkin-Huxley equations. We numerically solve the system of coupled non-linear ODEs and present the results for membrane voltage and calcium concentration. Experimental data, parameter estimation, and future plans to use this model to gain insight into sperm movement are discussed. (Received February 05, 2013)