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Structural Studies of Membrane Proteins Involved in Ion Transport

J. Morais Cabral, R. Albright, G. Clayton

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Introduction: The determination of crystals structures of potassium and chloride channels, the calcium ATPase and the mechano-sensitive channel has provided new insights into the molecular mechanisms of ion transport across cellular membranes. We are studying membrane proteins that use symport and antiport mechanisms to pump ions against the electrochemical gradient.

Methods and Materials: Membrane proteins are over-expressed in E.coli, extracted and purified in the presence of detergents. Crystals are grown by vapor diffusion using the sitting drop method.

Results: Different crystal forms have been grown with several detergents. Crystals are screened for diffraction quality.