

Structural Dynamics and the Gating of a large Pore Channel

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The cell membrane is selectively permeable to small molecules, with only a few able to diffuse across it unaided. Therefore, cells require transporters or channels to help transport small molecules and maintain internal composition. In response to specific stimuli, transporters and channels undergo conformational changes. These changes are crucial for regulating the transport of small molecules across cellular membranes, which is essential for various physiological processes. Since Cryo-EM can capture different protein conformational states in a single sample, it is an ideal method for studying protein conformational changes. Here, we present structures of an ATP release channel in two conformational states (narrow and wide). We believe the wide conformation is the ATP-releasing state. Between the two conformations, we observe rearrangement of the helices, which pushes protomers away from the pore, resulting in a wide pore configuration for ATP release.