

# Pore accessibility during C-type inactivation in Shaker K<sup>+</sup> channels

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Shaker K<sup>+</sup> channels inactivate through two distinct molecular mechanisms: N-type, which involves the N-terminal domain and C-type that appears to involve structural modifications at the external mouth of the channel. We have tested pore accessibility of the Shaker K<sup>+</sup> channel during C-type inactivation using Ba<sup>2+</sup> as a probe. We determined that external Ba<sup>2+</sup> binds to C-type inactivated channels forming an extremely stable complex; i.e. there is Ba<sup>2+</sup> trapping by C-type inactivated channels. The structural changes Shaker channels undergo during C-type inactivation create high energy barriers that hinder Ba<sup>2+</sup> exit to either the extracellular solution or to the intracellular solution.