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OPENING AND CLOSING TRANSITIONS OF A LARGE MITOCHONDRIAL CHANNEL WITH MICROSECOND TIME RESOLUTION. ((J.M. Tang, R.A. Levis, K.G. Lynn, and Bob Eisenberg))
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We have investigated the single channel current of a large conductance channel from the outer mitochondrial membrane. The gating characteristics of the channel were studied with the tip-dip technique and high bandwidth recording. This channel has a maximum conductance of 7 to 8 nS when recorded in symmetrical 3M KCl solution at room temperature. The channel has several distinct sets of conductance states. It shows different modes of opening and closing behaviors. The time course of opening and closing of the channel has been studied, with resolution of 1.2 μsec at a bandwidth of about 300 kHz. Initial data showed the channel able to open and close in less than 1.2 μsec . Occasionally, this channel appears to gate in a ramp mode (see figure). The time course is then much slower, often many μsec .

