

Role of aquaporin in the contractile vacuole of *Amoeba proteus*

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Based on the measurement of water permeability, we have hypothesized the presence of aquaporin in the membrane of the contractile vacuole (CV) of *Amoeba proteus*. In the present study, we cloned an aquaporin gene from *A. proteus* (*ApAQP*), which encodes a protein composed of 295 amino acids. The protein has six putative transmembrane domains and two NPA (Asn-Pro-Ala) motifs, which are conserved among aquaporins of other species. Expression analysis using *Xenopus* oocytes demonstrated that the gene encodes an aquaporin that is functional as a water channel. Immunofluorescence microscopy with anti-ApAQP antibody showed the localization of ApAQP on the CV membrane and the vesicles around CV. This is the first success in explaining the high water permeability of the CV membrane.