

Probing the pore size of the hemocyanin channel

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We have studied single-channel conductance for different monovalent cations and streaming potentials caused by osmotic gradients of non-electrolytes in hemocyanin-treated membranes. We have found that the smaller ion, which cannot pass through the channel, is tetramethylammonium and that acetamide is the smaller non-electrolyte excluded from the pore. From the streaming potentials measured, we calculated that no more than three water molecules can accompany the ion through the channel in a row. From these results we conclude that the hemocyanin channel has in its structure a narrow portion which can be represented as a cylinder 6 Å long and 5 Å in diameter.

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