

ET-4**Membrane Topology of the Integral Membrane Transporter for Ribose**

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RbsC of *Escherichia coli* is the integral membrane component of the high-affinity ribose transport system classified as the AraH family. To understand the function and structure of RbsC, the topology of RbsC was investigated by alkaline phosphatase fusion. Characterization of a total of 64 RbsC-PhoA fusions revealed that RbsC is composed of six transmembrane helices and has three periplasmic and two cytoplasmic loops. In order to confirm the cytoplasmic location of the C-terminal end, the inside-out or right side-out membrane vesicles were prepared, in which only C-terminal region of inside-out vesicle was digested with carboxypeptidase A. The digestion pattern of vesicles with carboxypeptidase A and the analysis of alkaline phosphatase fusions indicated that the N-terminal and C-terminal regions of RbsC are located in the cytoplasm. An alignment of the sequences of all known hydrophobic components of periplasmic binding protein-dependent ABC sugar transporters (AraH family) suggests that the homologous components have similar transmembrane structures.