Molecular Biological Approaches for Identification of Aquaporin-like Protein Gene in *Paramecium multimicronucleatum*

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SUMMARY

Aquaporin (AQP) belongs to the major intrinsic protein superfamily of integral plasma membrane channel proteins, and is involved in osmoregulation of various types of cells. In fresh water protozoans, water enters cells across the plasma membrane, depending on the osmotic gradient between the cytoplasm and the external fresh water. Protozoans are able to maintain cell volume against the influx of water via expulsion of water by contractile vacuole complexes (CVC). In *Paramecium*, the presence of water channels in the CVC membrane is assumed from both morphological and physiological data. However, neither biochemical nor molecular biological data have been provided. In order to examine the presence of AQP in *Paramecium*, we carried out RT-PCR with degenerated primers designed upon Paramecium DB (http://paramecium.cgm.cnrs-gif. fr/db/index). The obtained RT-PCR products were sequenced, and analyzed using the BLAST and Clustal W programs provided by the DDBJ website (http://blast.ddbj.nig.ac.jp/top-j.html, http://clustalw.ddbj.nig.ac.jp/top-j.html). While the obtained cDNA sequence and those encoded by the degenerated primer moieties showed a moderate sequence similarity to established AQPs from other species, a full sequencing study is still required.