**Structural studies of rat calucineurin B homologous protein 1**

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Calcineurin B homologous protein 1 (CHP1), also known as p22, is a calcium binding EF-hand protein and shows substantial sequence similarity with the regulatory B subunit of the protein phosphatase calcineurin (CNB). CHP1 was involved in membrane trafficking [1] and multiple celluar functions. CHP1 associates tightly with $Na^+/H^+$ exchangers (NHEs) and regulates its intracellular pH sensitivity [2]. CHP1 also significantly reduces the kinase activity of death-associaated protein (DAP) kinase related apoptosis inducing protein kinase 2 (DRAK2).

To clarify multiple functional mechanisms of CHP1, we have tried to determine CHP1 structure with X-ray crystallographic analysis. Crystals suitable for high-resolution X-ray analysis were obtained at 277 K by hanging drop vapor-diffusion method. Multi-wavelength anomalous dispersion method (MAD) was used for determination of phase. The polypeptide chain of CHP1 is folded into two globular domains (N-lobe and C-lobe) composed of an α-helical structure with 10 α-helices and $3_{10}$ helices. The target recognition mechanism will be discussed.

[1] Barroso M.R., Brend K.K, DeWitt N.D., Chang A., Mills K., Sztul E. S., *J. Biol. Chem*., 1996, **271**, 10183. [2] Pang T., Hisamitu T., Mori H., Shigekawa M., Wakabayasi, S. *Biochemistry*., 2004, **43**, 3628.

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