

Nephrocystin-4 regulates hyperpolarization in *Paramecium*

Emi OHTA, Ryusuke NISHIDA and Manabu HORI

(Dept. Biol. Chem., Fac. Sci., Yamaguchi Univ.)

SUMMARY

Nephronophthisis is a genetic disorder of the kidneys in human, is caused by the functional defects of nephrocystin. And nine genes (NPHP1-9) related this disorder are identified. These gene products have mechanosensory functions in renal tubule. It is reported that NPHP-4 homologous proteins play important and redundant roles in facilitating ciliary sensory signal transduction in sensory cilia of *C. elegans*. However, the molecular and cellular functions of NPHP-4 have remained elusive. To obtain the further information of the molecular function of NPHP-4, we performed functional analysis with NPHP-4 homologue of *Paramecium* (PtNPHP-4). We obtained the result that suggests PtNPHP-4 would regulate the hyperpolarization against various stimuli, such as mechano-stimulation.