

Principal Researcher	Katsutoshi Goto			Number of Researchers	4	
Research Institution · Department · Title	Professor, Department of Pharmacology, Institute of Basic Medical Sciences, University of Tsukuba			Location of Institution	Tsukuba	
Title of Project	The role of orexin in feeding behavior, sleep and wake regulation					
Abstract of Research Project	<p>Orexin is a neuropeptide synthesized in the neurons located in the lateral hypothalamic area which is known as a feeding center. Orexin knockout mice showing a phenotype resembling human-like narcolepsy, a type of hypersomnia revealed that orexin has a role not only in feeding behavior but also in sleep/wake regulation. We made several lines of transgenic mice using an orexin-promoter which can specifically express other genes in orexin neurons. One line of these mice specifically expresses a green fluorescent protein in orexin neurons and are used for electrophysiological analysis to identify afferent input to orexin neurons. The mice which specifically removed orexin neurons by expressing a lethal gene are a suitable model of narcolepsy and are subjected to experimental treatment by various drugs. This study will contribute to the understanding of the almost unknown mechanisms of feeding behavior and sleep/wake regulation by investigating the physiological role of orexin in a broad research from the molecular level to the whole animal's behavior.</p>					
References	<p>Yamanaka, A., et al. Orexins Activate Histaminergic Neurons via the Orexin 2 Receptor. <i>Biochem. Biophys. Res. Commun.</i> 290: 1237-1245, 2002</p> <p>Hara, J., et al. Genetic Ablation of Orexin Neurons in Mice Results in Narcolepsy, Hypophagia and Obesity. <i>Neuron.</i> 30(2): 345-354, 2001</p>					
Term of Project	Fiscal years 2002-2006. (5years)					
Budget Allocation (in thousand of yen)	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
	27,400	25,800	17,200	8,600	8,200	87,200
Homepage Address	<a href="http://www.md.tsukuba.ac.jp/public/basic-med/pharmacology/">http://www.md.tsukuba.ac.jp/public/basic-med/pharmacology/</a>					