

S05-2 **Eco-Pharma in the research of the functions of ATP receptors**

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ATP receptor subtypes express on all of the whole body including CNS (neurons and glia cells) and bear their functions. This universality of such receptor expression distribution is unparalleled in other receptor characteristics. Recently, we have obtained many reports indicating that the glial-neuron interaction plays very important roles controlling the brain and nerve function. We have been reporting several papers as a leading institute (Nature 2003, 2005, 2007). Especially, the findings that activated microglia expressing P2X4 receptors is a key player to evoke neuropathic pain after nerve damage had a great influence as the breakthrough to the worst pain treatment, and it was thought that P2X4 antagonist had a potential for the medicine against neuropathic pain (Nature2003, 2006; Science 2005, JAMA2003). It, however, takes more than 10 years for new drug development, then we need some good device for patients. As one of the devices, Eco-Pharma was proposed. Eco-Pharma is the system for finding drug seeds from medicines already approved by our government (approximately 3000 items which have a huge safety and valid information). For example, in the case of P2X4 receptor, we have found P2X4 receptor blockers from antidepressants. I will talk about the possibility and problems of Eco-Pharma in this Symposium.