

## Gangliosides from Echinoderms for Medicinal Resources

Ryuichi Higuchi

(Graduate School of Pharmaceutical Sciences, Kyushu University)

Gangliosides, sialic acid containing glycosphingolipids, have received much attention owing to their biological functions. Meanwhile, the effects of gangliosides in neurological diseases have recently been reported. Gangliosides are normal constituent of mammalian vertebrate cell membranes and are particularly abundant in the central and peripheral nervous systems. On the other hand, in the invertebrates, ganglioside could be found from echinoderms. We have been researching the pharmaceutically active gangliosides from echinoderms for developing the novel medicinal resources.

During the course of our search for the pharmaceutically active gangliosides from echinoderms, the ganglioside molecular species, **GP-2**, which has been obtained from the starfish *Asterina pectinifera*, has been found to support the survival of cultured neuronal cells. **GAA-7**, obtained from the starfish *Asterias amurensis versicolor* showed neuritogenic and growth-inhibitory activities toward the mouse neuroblastoma cell line (Neuro 2a). On the other hand, most of the ganglioside molecular species obtained from the starfish and sea cucumber, for example **SJG-1** from the sea cucumber *Stichopus japonicus*, exhibited neuritogenic activity toward the rat pheochromocytoma cell line, PC-12 cells.

