Ganglioside

A ganglioside is a molecule composed of a glycosphingolipid (ceramide and oligosaccharide) with one or more sialic acids (e.g. n-acetylneuraminic acid, NANA) linked on the sugar chain. NeuNAc, an acetylated derivative of the carbohydrate sialic acid, makes the head groups of gangliosides anionic at pH 7, which distinguishes them from globosides.

The name ganglioside was first applied by the German scientist Ernst Klenk in 1942 to lipids newly isolated from ganglion cells of the brain.

More than 60 gangliosides are known, which differ from each other mainly in the position and number of NANA residues. It is a component of the cell plasma membrane that modulates cell signal transduction events, and appears to concentrate in lipid rafts.

Recently, gangliosides have been found to be highly important molecules in immunology. Natural and semisynthetic gangliosides are considered possible therapeutics for neurodegenerative disorders.

Gangliosides, the major sialic acid containing glycosphingolipids in the mammalian brain, play important roles in brain development and neural functions.

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