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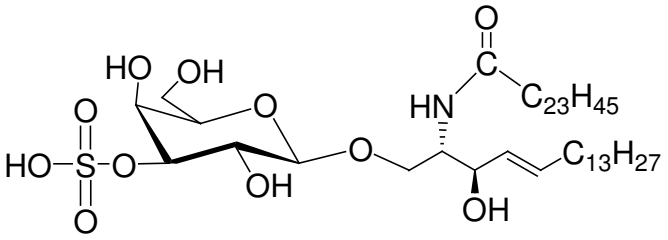
PRODUCT DATA SHEET

N-Tetracosenoyl-(*cis*-15)-sulfatide

Catalog No: 1931
Common Name: N-Nervonyl-sulfatide; N-C24:1-Sulfatide; N-Tetracosenoyl-sphingosyl-*beta*-D-galactoside-3-sulfate
Source: semisynthetic, bovine
Solubility: chloroform/methanol (5:1); DMSO
CAS No: N/A

Molecular Formula: $C_{48}H_{91}NO_{11}S$
Molecular Weight: 890
Storage: -20°C
Purity: TLC > 98%; identity confirmed by MS
TLC System: chloroform/methanol/DI water (60:30:4 by vol.)
Appearance: solid



Application Notes:

Sulfatide is a type of sulfolipid that is found primarily in the central nervous system and is a myelin-specific sphingolipid. A deficiency of sulfatide in white and gray matter has been associated with Alzheimer's disease and other types of dementia. Apoliprotein E plays an important regulating role in the metabolism of sulfatides.[1] A production of anti-sulfatide antibodies in the cerebrospinal fluid, leading to a deficiency in sulfatides, may be a cause of degeneration of the myelin sheath, leading to multiple sclerosis.[2] Metachromatic leukodystrophy is an inherited disorder characterized by a deficiency of the lysosomal enzyme arylsulfatase A and the subsequent accumulation of sulfatide in neural and visceral tissues.[3] An immunomodulatory role for sulfatides has been suggested in the pathogenesis of tuberculosis. Sulfatides decrease the in vitro production of proinflammatory cytokines.

Tetracosenoyl sulfatide has been found to be a major immunodominant specie in myelin. This has important implications for the design of therapeutics that target T cells reactive for myelin glycolipids in autoimmune diseases of the central nervous system.[4] Tetracosenoyl sulfatide has also been demonstrated to reverse ongoing chronic and relapsing experimental autoimmune encephalomyelitis in mice.[5]

Selected References:

1. H. Cheng, Y. Zhou, D. M. Holtzman, X. Han "Apolipoprotein E mediates sulfatide depletion in animal models of Alzheimer's disease." *Neurobiology of Aging* August *2008*
2. Ramesh C. Halder, A. Jahng, I. Maricic and Vipin Kumar "Mini Review: Immune Response to Myelin-Derived Sulfatide and CNS-Demyelination" *Neurochemical Research,* February, Vol. 32(2): 257, *2007*
3. Phillip D. Whitfield, Peter C. Sharp, David W. Johnson, Paul Nelson and Peter J. Meikle "Characterization of Urinary Sulfatides in Metachromatic Leukodystrophy Using Electrospray Ionization-Tandem Mass Spectrometry" *Molecular Genetics and Metabolism,* May Vol. 73(1): 30, *2001*
4. D. Zajonc et al. "Structural basis for CD1d presentation of a sulfatide derived from myelin and its implications for autoimmunity" *The Journal of Experimental Medicine*, Vol. 202(11) pp. 1517, *2005*
5. I. Maricic et al. "Dendritic Cells and Anergic Type I NKT Cells Play a Crucial Role in Sulfatide-Mediated Immune Regulation in Experimental Autoimmune Encephalomyelitis" *The Journal of Immunology*, 2014 doi: 10.4049/jimmunol.1302898

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