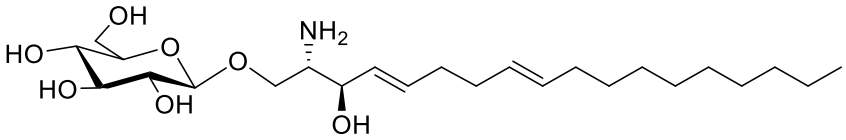
PRODUCT DATA SHEET

Glucosylsphingosine, plant

Catalog number: 1310
Common Name: Glucopsychosine; *lyso* Glucocerebroside; 1-*beta*-D-Glucosylsphingadienine
Source: semisynthetic, plant
Solubility: chloroform/methanol, 4:1
CAS number: 114200-59-8
Molecular Formula: $C_{24}H_{45}NO_7$

Molecular Weight: 460 (based on 1-*beta*-D-glucosylsphinga-4,8-dienine)
Storage: -20°C
Purity: TLC >98%; identity confirmed by MS
TLC System: chloroform/methanol/DI water/ammonium hydroxide (65:25:3:2 by vol.)
Appearance: solid



Application Notes:

Glucosylsphingosine is the *lyso*-derivative of the common glycolipid glucocerebroside. Gaucher disease is characterized by an accumulation of glucocerebroside due to a deficiency in the enzyme glucocerebrosidase and it has now been found that glucopsychosine also accumulates in this disease.[1] This accumulation of glucosylsphingosine contributes to neuronal dysfunction and destruction in patients with neuronopathic Gaucher disease[2] and it has been found to be a potent inhibitor of glucocerebrosidase. At least some instances of Gaucher disease also have a deficiency in the activity of glucosylsphingosine *beta*-glucosidase, the enzyme responsible for cleaving off the glucose of glucopsychosine and glucocerebroside. Like glucocerebroside and galactocerebroside, glucosylsphingosine can increase Ca_2^+ mobilization from intracellular stores although it uses a different mechanism.[3] Conduritol B epoxide (CBE), an inhibitor of *beta*-glucosidase, and l-phenyl-2-decanoylamino-3-morpholino-l-propanol (PDMP), an inhibitor of glucosylceramide synthase, can be used to create a model of Gaucher disease and consequently an accumulation of glucosylsphingosine.[4]

Selected References:

1. E. Orvisky et al. "Glucosylsphingosine accumulation in tissues from patients with Gaucher disease: correlation with phenotype and genotype" *Molecular genetics and metabolism*, Vol. 76(4) pp. 262-270, *2002*
2. R. Brady et al. "Toxicity of glucosylsphingosine (glucopsychosine) to cultured neuronal cells: a model system for assessing neuronal damage in Gaucher disease type 2 and 3" *Neurobiology of Disease*, Vol. 14(3) pp. 595-601, *2003*
3. E. Loyd-Evans et al. "Glucosylceramide and Glucosylsphingosine Modulate Calcium Mobilization from Brain Microsomes via Different Mechanisms" *The Journal of Biological Chemistry*, Vol. 278 pp. 23594-23599, *2003*
4. D. Sillance et al. "Glucosylceramide modulates membrane traffic along the endocytic pathway" *Journal of Lipid Research*, Vol. 43 pp. 1837-1845, *2002*

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