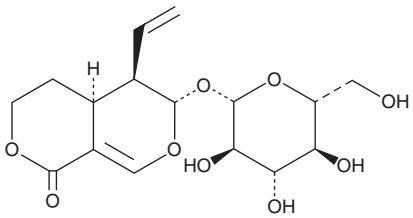
PRODUCT INFORMATION

(–)-Sweroside

Item No. 33454

CAS Registry No.:	14215-86-2
Formal Name:	(4aS,5R,6S)-5-ethenyl-6-(β-D-glucopyranosyloxy)-4,4a,5,6-tetrahydro-1H,3H-pyrano[3,4-c]pyran-1-one
Synonym:	1,9-*trans*-9,5-*cis*-Sweroside
MF:	$C_{16}H_{22}O_9$
FW:	358.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 244 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Swertia bimaculata*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(–)-Sweroside is supplied as a crystalline solid. A stock solution may be made by dissolving the (–)-sweroside in the solvent of choice, which should be purged with an inert gas. (–)-Sweroside is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of (–)-sweroside in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (–)-sweroside can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (–)-sweroside in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(–)-Sweroside is an iridoid glycoside that has been found in *L. japonica* and has diverse biological activities, including anti-inflammatory, antiproliferative, and anti-obesity properties.[1-3] It inhibits LPS-induced production of prostaglandin E_2 (PGE_2; Item No. 14010) and reactive oxygen species (ROS) in mouse RAW 264.7 macrophages when used at a concentration of 40 µM.[1] (–)-Sweroside inhibits the growth of U937 lymphoma and HL-60 leukemia cells (IC_{50}s = 67.92 and 62.58 µM, respectively) but not non-cancerous human peripheral blood mononuclear cells (PBMCs) or mouse bone marrow cells (BMCs).[2] It reduces tumor growth in an HL-60 mouse xenograft model when administered at a dose of 50 mg/kg. (–)-Sweroside (120 mg/kg) reduces weight gain and serum total cholesterol, triglyceride, LDL cholesterol (LDL-C), and free fatty acid (FFA) levels in a mouse model of obesity induced by a high-fat diet (HFD).[3]

References

1. Wang, R., Dong, Z., Lan, X., *et al.* Sweroside alleviated LPS-induced inflammation via SIRT1 mediating NF-κB and FOXO1 signaling pathways in RAW264.7 cells. *Molecules* **24(5)**, 872 (2019).
2. Han, X.-L., Li, J.-D., Wang, W.-L., *et al.* Sweroside eradicated leukemia cells and attenuated pathogenic processes in mice by inducing apoptosis. *Biomed. Pharmacother.* **95**, 477-486 (2017).
3. Yang, Q., Shu, F., Gong, J., *et al.* Sweroside ameliorates NAFLD in high-fat diet induced obese mice through the regulation of lipid metabolism and inflammatory response. *J. Ethnopharmacol.* **255**, 112556 (2020).

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