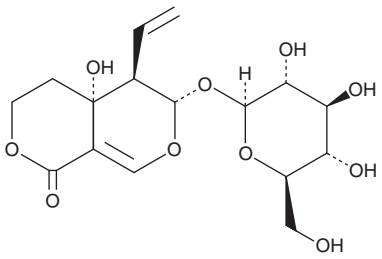
PRODUCT INFORMATION

Swertiamarin

Item No. 27634

CAS Registry No.:	17388-39-5
Formal Name:	(4aR,5R,6S)-5-ethenyl-6-(β-D-glucopyranosyloxy)-4,4a,5,6-tetrahydro-4a-hydroxy-1H,3H-pyrano[3,4-c]pyran-1-one
MF:	$C_{16}H_{22}O_{10}$
FW:	374.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 238 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item origin:	Plant/*Swertia chirayita*



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

Laboratory Procedures

Swertiamarin is supplied as a solid. A stock solution may be made by dissolving the swertiamarin in the solvent of choice, which should be purged with an inert gas. Swertiamarin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of swertiamarin in ethanol is approximately 3 mg/ml and approximately 10 mg/ml in DMSO and DMF.

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 swertiamarin can be prepared by directly dissolving the solid in aqueous buffers. The solubility of swertiamarin in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Swertiamarin is an orally bioavailable secoiridoid glycoside that has been found in *E. axillare* and has diverse biological activities, including antioxidant, anti-inflammatory, antidiabetic, and hepatoprotective properties.[1-5] It scavenges ABTS (Item No. 27317) radicals and hydrogen peroxide (IC_{50}s = 2.83 and 5.7 µM, respectively).[1] Swertiamarin (50 µg/ml) inhibits nitric oxide (NO) production in IL-1β-stimulated fibroblast-like synoviocytes (FLSs) isolated from rat hindpaw.[2] Swertiamarin (25 µg/ml) inhibits oleate-induced lipid droplet and triglyceride accumulation in HepG2 cells.[4] It decreases liver lipid accumulation, ballooning degeneration, and TNF-α and IL-6 levels in a mouse model of fructose-induced nonalcoholic fatty liver disease (NAFLD) when administered at a dose of 50 mg/kg per day.[5] Swertiamarin (50 mg/kg per day) also decreases fasting blood glucose and serum cholesterol levels in a rat model of diabetes induced by streptozotocin (STZ; Item No. 13104).[3]

References

1. Vaijanathappa, J. and Badami, S. *Planta Med.* **75(1)**, 12-17 (2009).
2. Saravanan, S., Islam, V.I., Thirugnanasambantham, K., *et al. Inflamm. Res.* **63(6)**, 451-462 (2014).
3. Sonawane, R.D., Vishwakarma, S.L., Lakshmi, S., *et al. Mol. Cell Biochem.* **340(1-2)**, 1-6 (2010).
4. Patel, T.P., Rawal, K., Soni, S., *et al. Biomed. Pharmacother.* **83**, 785-791 (2016).
5. Yang, Y., Li, J., Wei, C., *et al. Phytomedicine* **59**, 152782 (2019).

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