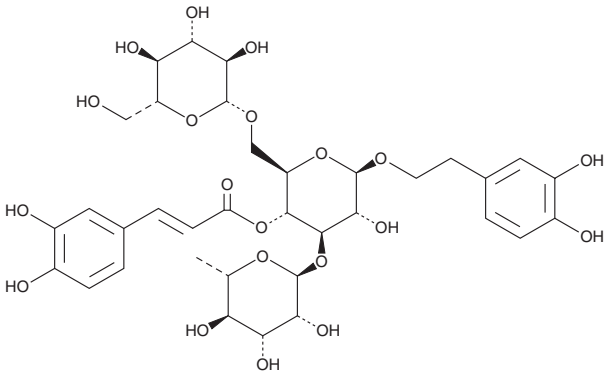
PRODUCT INFORMATION

Echinacoside

Item No. 29927

CAS Registry No.:	82854-37-3
Formal Name:	2-(3,4-dihydroxyphenyl)ethyl O-6-deoxy-α-L-mannopyranosyl-(1→3)-O-[β-D-glucopyranosyl-(1→6)]-β-D-glucopyranoside, 4-[3-(3,4-dihydroxyphenyl)-2-propenoate]
Synonyms:	Kusaginin, NSC 603831, *trans*-Acteoside, *trans*-Verbascoside
MF:	$C_{35}H_{46}O_{20}$
FW:	786.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 219, 336 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Plant/*Cistanches herba*



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

Laboratory Procedures

Echinacoside is supplied as a crystalline solid. A stock solution may be made by dissolving the echinacoside in the solvent of choice, which should be purged with an inert gas. Echinacoside is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of echinacoside in ethanol is approximately 5 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Echinacoside is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, echinacoside should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Echinacoside has a solubility of approximately 0.1 mg/ml in a 1:9 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Echinacoside is a phenylethanoid glycoside that has been found in *Echinacea* and has diverse biological activities.[1-4] It scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) radicals (EC_{50} = 6.6 µM in a cell-free assay).[1] Echinacoside (10 µg/ml) inhibits hydrogen peroxide-induced production of reactive oxygen species (ROS) and apoptosis in PC12 cells.[2] It reduces increases in plasma alanine aminotransferase (ALT), TNF-α, IL-1β, IL-16, and IL-10 levels and hepatocyte apoptosis induced by LPS/D-galactosamine in a mouse model of acute liver injury when administered at a dose of 60 mg/kg.[3] Echinacoside (20 mg/kg per day for 15 days) prevents loss of dopaminergic neurons in the substantia nigra pars compacta and decreases in striatal dopamine and 3,4-dihydroxyphenylacetic acid (DOPAC) levels in a mouse model of MPTP-induced Parkinson's disease.[4] It also improves motor performance in the rotarod test in the same model.

References

1. Pellati, F., Benvenuti, S., Magro, L., *et al. J. Pharm. Biomed. Anal.* **35(2)**, 289-301 (2004).
2. Kuang, R., Sun, Y., Yuan, W., *et al. Planta Med.* **75(14)**, 1499-1504 (2009).
3. Li, X., Gou, C., Yang, H., *et al. Scand. J. Gastroenterol.* **49(8)**, 993-1000 (2014).
4. Geng, X., Tian, X., Tu, P., *et al. Eur. J. Pharmacol.* **564(1-3)**, 66-74 (2007).

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