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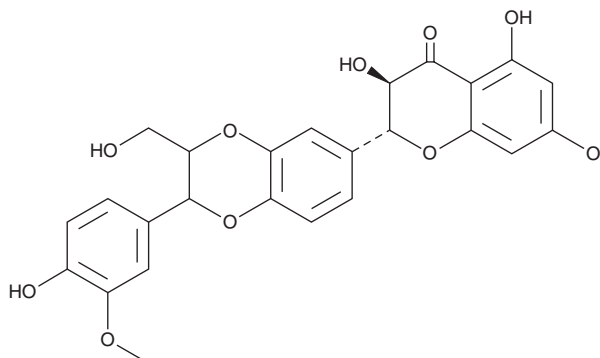
PRODUCT INFORMATION



Isosilybin

Item No. 24913

CAS Registry No.: 72581-71-6
Formal Name: (2R,3R)-2-[2,3-dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-(hydroxymethyl)-1,4-benzodioxin-6-yl]-2,3-dihydro-3,5,7-trihydroxy-4H-1-benzopyran-4-one
Synonyms: Isosilibinin, Isosilybinin, Silybin B
MF: C₂₅H₂₂O₁₀
FW: 482.4
Purity: ≥95%
UV/Vis.: λ_{max}: 207, 289 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Isosilybin is supplied as a crystalline solid. A stock solution may be made by dissolving the isosilybin in the solvent of choice, which should be purged with an inert gas. Isosilybin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of isosilybin in these solvents is approximately 0.1, 10, and 20 mg/ml, respectively.

Isosilybin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, isosilybin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Isosilybin has a solubility of approximately 0.5 mg/ml in a 1:9 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Isosilybin is a flavanolignan found in the extract of *S. marianum* fruits with antioxidant and anticancer activities.¹⁻³ It inhibits lipid peroxidation in rat liver microsomes (IC₅₀ = 32 μM) and reduces ADP/Fe³⁺-induced malondialdehyde (MDA) production and lactate dehydrogenase (LDH) release in rat hepatocytes.¹ Isosilybin inhibits the production of reactive oxygen species (ROS), MDA and LDH release, and reduction in total antioxidant capacity induced by amyloid-β (25-35) (Aβ₂₅₋₃₅) in HT-22 hippocampal cells.² It also increases protein and mRNA expression of heme oxygenase-1 (HO-1), glutathione S-transferase (GST), and the aldo-keto reductases (AKCR) 1C1 and AKCR1C2 in HT-22 cells. *In vivo*, isosilybin (50 and 100 mg/kg) reduces tumor volume and increases tumor cell apoptosis in a DU145 prostate cancer mouse xenograft model.³ It also reduces expression of the tumor angiogenesis markers CD31, nestin, VEGF, VEGFR1, VEGFR2, phospho-Akt, and HIF-1α in tumor tissue without reducing blood vessel count in non-cancerous liver, lung, and kidney tissue in DU145 tumor-bearing mice.

References

1. Bosio, E., Benelli, C., and Pirola, O. Effect of the flavanolignans of *Silybum marianum* L. on lipid peroxidation in rat liver microsomes and freshly isolated hepatocytes. *Pharmacol. Res.* **25**(2), 147-154 (1992).
2. Zhou, J., Chao, G., Li, Y., *et al.* Activation of NRF2/ARE by isosilybin alleviates Aβ₂₅₋₃₅-induced oxidative stress injury in HT-22 cells. *Neurosci. Lett.* **632**, 92-97 (2016).
3. Deep, G., Gangar, S.C., Rajamanickam, S., *et al.* Angiopreventive efficacy of pure flavonolignans from milk thistle extract against prostate cancer: Targeting VEGF-VEGFR signaling. *PLoS One* **7**(4), e34630 (2012).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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