**PRODUCT INFORMATION**

Isosilybin  
Item No. 24913

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**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:** Isolisilibinin, Isolisilybinin, Silybin B  
**MF:** C_{25}H_{22}O_{10}  
**FW:** 482.4  
**Purity:** ≥95%  
**UV/Vis.:** λ_{max}^\text{nm} 207, 289  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥2 years  

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

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**Laboratory Procedures**

Isosilybin is supplied as a crystalline solid. A stock solution may be made by dissolving the isosilybin in the solvent of choice. Isosilybin is soluble in organic solvents such as ethanol, DMSO, and dimethylformamide (DMF), which should be purged with an inert gas. 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.

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**Description**

Isosilybin is a flavonolignan found in the extract of *S. marianum* fruits with antioxidant and anticancer activities.\(^1\)\(^-\)\(^3\) It inhibits lipid peroxidation in rat liver microsomes (IC_{50} = 32 μM) and reduces ADP/Fe^{3+}-induced malondialdehyde (MDA) production and lactate dehydrogenase (LDH) release in rat hepatocytes.\(^2\) 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.

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**References**