# PRODUCT INFORMATION

## Silychristin

*Item No. 34658*

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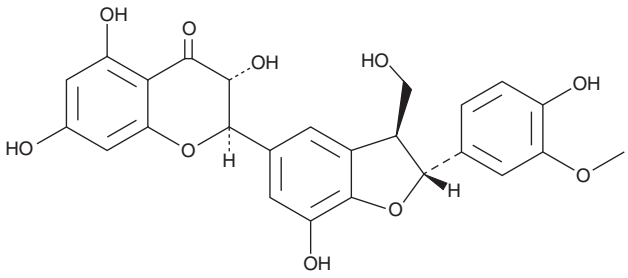
| **CAS Registry No.:** | 33889-69-9 |
| **Formal Name:** | (2R,3R)-2-[(2R,3S)-2,3-dihydro-7-hydroxy-2-(4-hydroxy-3-methoxyphenyl)-3-(hydroxymethyl)-5-benzofuranyl]-2,3-4H-1-benzopyran-4-one |
| **Synonyms:** | Silychristin A, (+)-Silychristin |
| **MF:** | $C_{25}H_{22}O_{10}$ |
| **FW:** | 482.4 |
| **Purity:** | ≥98% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |
| **Item Origin:** | Plant/*Silybum marianum* |




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

### Laboratory Procedures

Silychristin is supplied as a solid. A stock solution may be made by dissolving the silychristin in the solvent of choice, which should be purged with an inert gas. Silychristin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of silychristin in these solvents is approximately 25 mg/ml.

Silychristin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, silychristin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Silychristin has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Silychristin is a flavonolignan that has been found in *S. marianum* and has diverse biological activities.[1-3] It inhibits monocarboxylate transporter 8 (MCT8; $IC_{50}$ = ~100 nM) and MCT8-dependent uptake of the thyroid hormone 3,3',5-triiodo-L-thyronine (T3) in MDCK cells and primary mouse astrocytes ($IC_{50}$s = 170 and 50 nM, respectively).[1] Silychristin scavenges DPPH (Item No. 14805) radicals in a cell-free assay ($IC_{50}$ = 18.97 µM) and inhibits *tert*-butyl-induced lipid peroxidation in rat liver microsomes ($IC_{50}$ = 5.45 µM).[2] It also inhibits P-glycoprotein (P-gp) in P-gp-containing membranes ($IC_{50}$ = 21 µM) and LPS-induced production of nitric oxide (NO) in RAW 264.7 cells ($IC_{50}$ = 65 µM).[3]

### References


1. Johannes, J., Jayarama-Naidu, R., Meyer, F., *et al.* Silychristin, a flavonolignan derived from the milk thistle, is a potent inhibitor of the thyroid hormone transporter MCT8. *Endocrinology* **157(4)**, 1694-1701 (2016).
2. Biedermann, D., Buchta, M., Holečková, V., *et al.* Silychristin: Skeletal alterations and biological activities. *J. Nat. Prod.* **79(12)**, 3086-3092 (2016).
3. Viktorová, J., Dobiasová, S., Řehořová, K., *et al.* Antioxidant, anti-inflammatory, and multidrug resistance modulation activity of silychristin derivatives. *Antioxidants* **8(8)**, 303 (2019).





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