

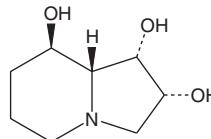
# PRODUCT INFORMATION



## Swainsonine

Item No. 16860

**CAS Registry No.:** 72741-87-8  
**Formal Name:** (1S,2R,8aR)-octahydro-indolizinetriol  
**Synonym:** Tridolgosir  
**MF:** C<sub>8</sub>H<sub>15</sub>NO<sub>3</sub>  
**FW:** 173.2  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥5 years



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

### Laboratory Procedures

Swainsonine is supplied as a crystalline solid. A stock solution may be made by dissolving the swainsonine in an organic solvent purged with an inert gas. Swainsonine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of swainsonine in these solvents is approximately 10 mg/ml.

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 swainsonine can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of swainsonine in PBS, pH 7.2, is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Swainsonine is an indolizidine alkaloid naturally found in certain plants including locoweed that inhibits N-linked glycoside hydrolases, preventing the processing of asparagine-linked glycoproteins. It reversibly inhibits lysosomal  $\alpha$ -mannosidase and Golgi  $\alpha$ -mannosidase II ( $IC_{50} = 0.2 \mu M$ ).<sup>1</sup> Swainsonine is used to study the role of N-linked glycosylation in cellular processes and has been shown to have antiproliferative and antimetastatic effects on cancer cells in culture and in mice.<sup>2-4</sup> The inhibition of  $\alpha$ -mannosidase activity in lysosomes produces an accumulation of partially-processed oligosaccharides and glycoproteins, giving rise to lysosomal storage disease. Swainsonine toxicity in herbivores results in a condition known as locoism, characterized by hyperactivity, aggression, stiff and clumsy gait, low head carriage, salivation, seizures, and apparent blindness, culminating in increased miscoordination, weakness, and death.

### References

1. Tulsiana, D.R.P., Broquist, H.P., and Touster, O. *Arch. Biochem. Biophys.* **236**, 427-434 (1985).
2. Dennis, J.W., Koch, K., Yousefi, S., et al. *Cancer Res.* **50**, 1867-1872 (1990).
3. Reddy, B.V.V.G. and Kalraiya, R.D. *Biochim. Biophys. Acta* **1760**, 1393-1402 (2006).
4. Sun, J.-Y., Zhu, M.-Z., Wang, S.-W., et al. *Phytomedicine* **14**, 353-359 (2007).

#### 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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