

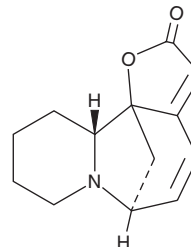
# PRODUCT INFORMATION



## (-)-Securinine

Item No. 24902

**CAS Registry No.:** 5610-40-2  
**Formal Name:** (6S,11aR,11bS)-9,10,11,11a-tetrahydro-8H-6,11b-methanofuro[2,3-c]pyrido[1,2-a]azepin-2(6H)-one  
**Synonyms:** NSC 107413, L-Securinine  
**MF:** C<sub>13</sub>H<sub>15</sub>NO<sub>2</sub>  
**FW:** 217.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 254 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

(-)-Securinine is supplied as a crystalline solid. A stock solution may be made by dissolving the (-)-securinine in the solvent of choice, which should be purged with an inert gas. (-)-Securinine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (-)-securinine in these solvents is approximately 16, 20, and 33 mg/ml, respectively.

(-)-Securinine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (-)-securinine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (-)-Securinine has a solubility of approximately 0.20 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

(-)-Securinine is an alkaloid originally isolated from *S. suffruticosa*.<sup>1</sup> It reduces proliferation of SW480 colon adenocarcinoma cells in a dose- and time-dependent manner via increased Beclin 1 expression and induction of autophagy.<sup>2</sup> It decreases viability of HL-60 leukemia cells (IC<sub>50</sub>s = 47.88, 23.85, and 18.87 μM at 24, 48, and 72 hours post-treatment, respectively).<sup>3</sup> It also induces cell cycle arrest at the G<sub>1</sub>/S phase and decreases PI3K, Akt, and mTOR gene expression in a dose-dependent manner. (-)-Securinine inhibits GABA and GABA-activated benzodiazepine binding to rat brain membranes (IC<sub>50</sub>s = 57 and 101 μM, respectively).<sup>1</sup> *In vivo*, (-)-securinine (5.2 mg/kg) induces clonic and tonic convulsions in mice, an effect that is reversed by administration of GABA.<sup>4</sup>

### References

1. Beutler, J.A., Karbon, E.W., Brubaker, A.N., *et al.* Securinine alkaloids: A new class of GABA receptor antagonist. *Brain Res.* **330(1)**, 135-140 (1985).
2. Xia, Y.-H., Chang, C.-R., Yao, S.-Y., *et al.* L-securinine induced the human colon cancer SW480 cell autophagy and its molecular mechanism. *Fitoterapia* **82(8)**, 1258-1264 (2011).
3. Han, S., Zhang, G., Li, M., *et al.* L-securinine induces apoptosis in the human promyelocytic leukemia cell line HL-60 and influences the expression of genes involved in the PI3K/AKT/mTOR signaling pathway. *Oncol. Rep.* **31(5)**, 2245-2251 (2014).
4. Tao, S.-C., Peng, J.-Z., and Lu, M.-W. Central convulsive action of l-securinine. *Zhongguo Yao Li Xue Bao.* **7(1)**, 9-12 (1986).

#### 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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