

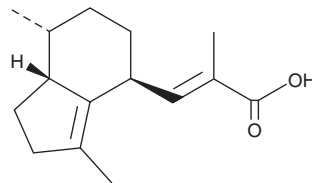
# PRODUCT INFORMATION



## Valerenic Acid

Item No. 40113

**CAS Registry No.:** 3569-10-6  
**Formal Name:** (2E)-3-[(4S,7R,7aR)-2,4,5,6,7,7a-hexahydro-3,7-dimethyl-1H-inden-4-yl]-2-methyl-2-propenoic acid  
**MF:** C<sub>15</sub>H<sub>22</sub>O<sub>2</sub>  
**FW:** 234.3  
**Purity:** ≥98%  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Item Origin:** Plant/*Valeriana officinalis* L.



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

### Laboratory Procedures

Valerenic acid is supplied as a solid. A stock solution may be made by dissolving the valerenic acid in the solvent of choice, which should be purged with an inert gas. Valerenic acid is soluble in ethanol.

### Description

Valerenic acid is a sesquiterpenoid that has been found in *V. officinalis* and has diverse biological activities.<sup>1-5</sup> It selectively transactivates retinoid X receptor  $\beta$  (RXR $\beta$ ) over RXR $\alpha$  and RXR $\gamma$  in reporter assays using HEK293T cells (EC<sub>50</sub>s = 5.2, 27, and 43  $\mu$ M, respectively), as well as the retinoic acid receptors (RARs), peroxisome proliferator-activated receptors (PPARs), liver X receptors (LXRs), farnesoid X receptor (FXR), constitutive androstane receptor (CAR), vitamin D receptor (VDR), and pregnane X receptor (PXR) at 30  $\mu$ M.<sup>2</sup> Valerenic acid also enhances GABA-induced activation of  $\alpha_1\beta_2\gamma_2$ -subunit containing GABA receptors in CHO cells (EC<sub>50</sub> = 12.6  $\mu$ M).<sup>3</sup> It is cytotoxic to GLC-4 lung and COLO 320 colon cancer cells (IC<sub>50</sub>s = 127 and 124  $\mu$ M, respectively).<sup>1</sup> Valerenic acid (100 mg/kg, i.p.) decreases motor performance in the rotarod test and increases pentobarbital-induced sleeping time in mice.<sup>4</sup> It increases the number of entries into and percentage of time spent in the open arms of the elevated plus maze in mice, indicating anxiolytic-like activity, when administered at a dose of 12 mg/kg.<sup>5</sup>

### References

1. Bos, R., Hendriks, H., Scheffer, J.J., *et al.* Cytotoxic potential of valerian constituents and valerian tinctures. *Phytomedicine* **5(3)**, 219-225 (1998).
2. Merk, D., Grisoni, F., Friedrich, L., *et al.* Computer-assisted discovery of retinoid X receptor modulating natural products and isofunctional mimetics. *J. Med. Chem.* **61(12)**, 5442-5447 (2018).
3. Syafni, N., Faleschini, M.T., Garifulina, A., *et al.* Clerodane diterpenes from *Casearia corymbosa* as allosteric GABA<sub>A</sub> receptor modulators. *J. Nat. Prod.* **85(5)**, 1201-1210 (2022).
4. Hendriks, H., Bos, R., Woerdenbag, H.J., *et al.* Central nervous depressant activity of valerenic acid in the mouse. *Planta Med.* **51(1)**, 28-31 (1985).
5. Pinder, N.E., Ligocki, I.Y., Horton, B.M., *et al.* Valerenic acid reduces anxiety-like behavior in young adult, female (C57BL/6J) mice. *Behav. Brain Res.* **457:114717**, (2024).

#### 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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