

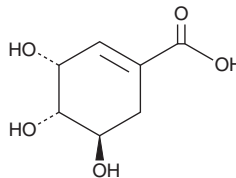
# PRODUCT INFORMATION



## Shikimic Acid

Item No. 26851

**CAS Registry No.:** 138-59-0  
**Formal Name:** 3R,4S,5R-trihydroxy-1-cyclohexene-1-carboxylic acid  
**Synonyms:** NSC 59257, (-)-Shikimic Acid, L-Shikimic Acid  
**MF:** C<sub>7</sub>H<sub>10</sub>O<sub>5</sub>  
**FW:** 174.2  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 213 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

Shikimic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the shikimic acid in the solvent of choice. Shikimic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of shikimic acid in ethanol is approximately 2.5 mg/ml and approximately 25 mg/ml in DMSO and DMF.

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 shikimic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of shikimic acid in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Shikimic acid is a cyclohexenecarboxylic acid originally isolated from *I. religiosum*.<sup>1</sup> It is an intermediate in the biosynthesis of aromatic amino acids in plants and microorganisms. Shikimic acid is also a precursor in the synthesis of oseltamivir (Item No. 16070).<sup>2</sup> It decreases lipid droplet accumulation in HepG2 cells and 3T3-L1 adipocytes when used at a concentration of 80 μM, as well as increases the levels of phosphorylated AMPK and decreases the levels of MID1P1 in HepG2 and 3T3-L1 adipocytes when used at 40 μM.<sup>3</sup> Shikimic acid increases differentiation of oligodendrocyte precursor cells *in vitro*.<sup>4</sup> It decreases inflammation and demyelination in a mouse model of experimental autoimmune encephalomyelitis (EAE) when administered at doses of 50-200 mg/kg and reduces symptom progression at a dose of 100 mg/kg.<sup>4</sup> It also induces remyelination in a model of focal demyelination induced by L-α-lysophosphatidylcholine (LPC) in mouse dorsal spinal cord.

### References

1. Bohm, B.A. *Chem. Rev.* **65**(4), 435-466 (1965).
2. Rawat, G., Tripathi, P., and Saxena, R.K. *Appl. Microbiol. Biotechnol.* **97**(10), 4277-4287 (2013).
3. Kim, M.J., Sim, D.Y., Lee, H.M., et al. *Int. J. Mol. Sci.* **20**(3), E582 (2019).
4. Lu, F., Yin, D., Pu, Y., et al. *Neurosci. Bull.* **35**(3), 434-446 (2019).

#### 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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