

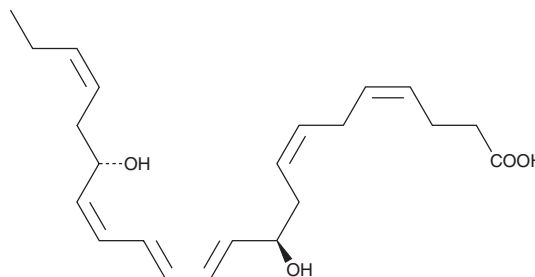
# PRODUCT INFORMATION



## Protectin D1

Item No. 10010390

**CAS Registry No.:** 660430-03-5  
**Formal Name:** 10R,17S-dihydroxy-4Z,7Z,11E,13E,15Z,19Z-docosahexaenoic acid  
**Synonyms:** Neuroprotectin D1, NPD1, PD1  
**MF:** C<sub>22</sub>H<sub>32</sub>O<sub>4</sub>  
**FW:** 360.5  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 272, 283 nm  
**Supplied as:** A solution in ethanol  
**Storage:** -80°C  
**Stability:** ≥1 year



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

### Laboratory Procedures

Protectin D1 is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of protectin D1 in these solvents is approximately 50 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. If an organic solvent-free solution of protectin D1 is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of protectin D1 in PBS, pH 7.2, is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Protectin D1 is a specialized pro-resolving mediator (SPM) synthesized from docosahexaenoic acid (DHA; Item No. 90310).<sup>1</sup> DHA is oxidized to 16S,17S-epoxy-protectin, which is converted to protectin D1 enzymatically. Protectin D1 increases phagocytosis of apoptotic polymorphonuclear leukocytes (PMNs) by macrophages in a non-phlogistic manner and is generated *in vitro* during macrophage-apoptotic interactions.<sup>2</sup> It enhances phagocytosis in mice after 24 hours, but not at the initiation or peak of inflammation. It also decreases PMN infiltration in a zymosan-induced mouse model of inflammation when administered at a dose of 300 ng per animal. Protectin D1 (200 µg, i.v.) inhibits increases in neutrophil counts in bronchoalveolar fluid (BALF) and lung myeloperoxidase activity in a mouse model of pulmonary injury and inflammation induced by intratracheal LPS instillation.<sup>3</sup> It also decreases pulmonary edema and promotes neutrophil apoptosis in BALF.

### References

1. Rodriguez, A.R. and Spur, B.W. *Tetrahedron Lett.* **56(42)**, 5811-5815 (2015).
2. Schwab, J.M., Chiang, N., Arita, M., et al. *Nature* **447(7146)**, 869-874 (2007).
3. Li, X., Li, C., Liang, W., et al. *Chin. Med. J. (Engl.)* **127(5)**, 810-814 (2014).

#### 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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