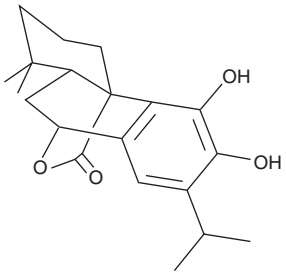
PRODUCT INFORMATION

Carnosol

Item No. 89800

CAS Registry No.: 5957-80-2
Formal Name: 1,3,4,9,10,10aS-hexahydro-5,6-dihydroxy-1,1-dimethyl-7-isopropyl-2H-9S,4aR-(epoxymethano) phenanthren-12-one
Synonym: NSC 39143
MF: $C_{20}H_{26}O_4$
FW: 330.4
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥3 years



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

Laboratory Procedures

Carnosol is supplied as a crystalline solid. A stock solution may be made by dissolving the carnosol in the solvent of choice, which should be purged with an inert gas. Carnosol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of carnosol in these solvents is approximately 8, 250, and 35 mg/ml, respectively.

Carnosol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, carnosol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Carnosol has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. Carnosol is also soluble in PBS (pH 7.2) at a concentration of less than 30 µg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Carnosol is a phenol that has been found in rosemary (*R. officinalis*) and has diverse biological activities.[1-4] It decreases nitric oxide (NO) production in mouse peritoneal exudate macrophages when used at concentrations ranging from 6 to 25 µM.[1] Carnosol scavenges peroxyl and hydroxyl radicals and inhibits lipid peroxidation in cell-free assays.[2] It inhibits 5-lipoxygenase (5-LO; IC_{50} = 0.1 µM for the recombinant human enzyme) and the synthesis of leukotrienes in human polymorphonuclear leukocytes (PMNs; IC_{50} = 7 µM).[3] *In vivo*, carnosol (200 mg/kg) reduces mammary DNA adduct formation and tumorigenesis in a rat model of DMBA-induced mammary tumorigenesis.[4]

References

1. Chan, M.M., Ho, C.T., and Huang, H.I. Effects of three dietary phytochemicals from tea, rosemary, and turmeric on inflammation-induced nitrite production. *Cancer Lett.* **96(1)**, 23-29 (1995).
2. Aruoma, O.I., Halliwell, B., Aeschbach, R., *et al.* Antioxidant and pro-oxidant properties of active rosemary constituents: Carnosol and carnosic acid. *Xenobiotica* **22(2)**, 257-268 (1992).
3. Poeckel, D., Greiner, C., Verhoff, M., *et al.* Carnosic acid and carnosol potently inhibit human 5-lipoxygenase and suppress pro-inflammatory responses of stimulated human polymorphonuclear leukocytes. *Biochem. Pharmacol.* **76(1)**, 91-97 (2008).
4. Singletary, K., MacDonald, C., and Wallig, M. Inhibition by rosemary and carnosol of 7,12-dimethylbenz[a] anthracene (DMBA)-induced rat mammary tumorigenesis and in vivo DMBA-DNA adduct formation. *Cancer Lett.* **104(1)**, 43-48 (1996).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM