

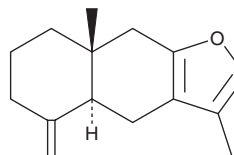
PRODUCT INFORMATION



Atractylon

Item No. 37568

CAS Registry No.: 6989-21-5
Formal Name: 4,4a,5,6,7,8,8a,9-octahydro-3,8a-dimethyl-5-methylene-naphtho[2,3-b]furan
MF: $C_{15}H_{20}O$
FW: 216.3
Purity: $\geq 95\%$
Supplied as: A solid
Storage: -20°C
Stability: ≥ 4 years
Item Origin: Plant/*Atractylodes lancea* (Thunb.) DC.



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

Laboratory Procedures

Atractylon is supplied as a solid. A stock solution may be made by dissolving the atractylon in the solvent of choice, which should be purged with an inert gas. Atractylon is soluble (≥ 10 mg/ml) in chloroform and sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

Description

Atractylon is a sesquiterpene that has been found in *A. lancea* and has diverse biological activities.¹⁻⁴ It scavenges DPPH (Item No. 14805) radicals in a cell-free assay when used at concentrations of 0.01, 0.1, or 1 mg/ml.¹ Atractylon is an antagonist of dopamine D_2 receptors ($IC_{50} = 2.5$ μM).² It is also an inhibitor of 5-lipoxygenase (5-LO; $IC_{50} = 25.1$ μM).³ Atractylon inhibits *tert*-butyl hydroperoxide-induced release of alanine transaminase (ALT) and lactate dehydrogenase (LDH) and increases in intracellular malondialdehyde (MDA) and DNA damage in primary rat hepatocytes.¹ It induces apoptosis and disrupts the mitochondrial membrane potential in HepG2 and MHCC97H hepatic cancer cells when used at concentrations of 5, 10, or 20 μM .⁴ Atractylon inhibits migration and invasion, decreases the levels of α -smooth muscle actin (α -SMA), vimentin, N-cadherin, matrix metalloproteinase-2 (MMP-2) and MMP-9, and increases E-cadherin and tissue inhibitor of metalloproteinases 2 (TIMP-2) in the same cells. It decreases tumor volume and weight in a HepG2 mouse xenograft model when administered at doses of 5 or 10 mg/kg per day. Atractylon (20 or 50 mg/kg per day) increases the number of striatal dopamine receptor-positive neurons and decreases gait impairment in a mouse model of Parkinson's disease induced by MPTP.²

References

1. Hwang, J.M., Tseng, T.H., Hsieh, Y.S., *et al.* Inhibitory effect of atractylon on *tert*-butyl hydroperoxide induced DNA damage and hepatic toxicity in rat hepatocytes. *Arch. Toxicol.* **70**(10), 640-644 (1996).
2. Li, H., Wang, F., Zhou, Z., *et al.* Atractylon, a novel dopamine 2 receptor agonist, ameliorates Parkinsonian like motor dysfunctions in MPTP-induced mice. *Neurotoxicology* **89**, 121-126 (2022).
3. Resch, M., Steigel, A., Chen, Z.L., *et al.* 5-Lipoxygenase and cyclooxygenase-1 inhibitory active compounds from *Atractylodes lancea*. *J. Nat. Prod.* **61**, 347-350 (1998).
4. Cheng, Y., Chen, T., Yang, X., *et al.* Atractylon induces apoptosis and suppresses metastasis in hepatic cancer cells and inhibits growth in vivo. *Cancer Manag. Res.* **11**, 5883-5894 (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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