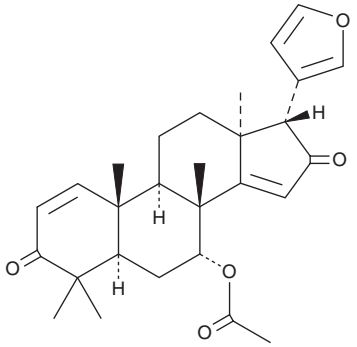
PRODUCT INFORMATION

Azadiradione

Item No. 37063

CAS Registry No.:	26241-51-0
Formal Name:	(5α,7α,13α,17α)-7-(acetyloxy)-21,23-epoxy-4,4,8-trimethyl-24-norchola-1,14,20,22-tetraene-3,16-dione
MF:	$C_{28}H_{34}O_5$
FW:	450.6
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

Azadiradione is supplied as a solid. A stock solution may be made by dissolving the azadiradione in the solvent of choice, which should be purged with an inert gas. Azadiradione is sparingly soluble (1-10 mg/ml) in chloroform and slightly soluble (0.1-1 mg/ml) in methanol.

Description

Azadiradione is a limonoid that has been found in *A. indica* and has diverse biological activities.[1-5] It inhibits heparin-induced tau aggregation by 54.2% in a cell-free assay when used at a concentration of 400 µM.[1] Azadiradione inhibits the tautomerase activity of human, *P. falciparum*, and *P. yoelii* migration inhibitory factor (MIF; IC_{50}s = 35.2, 45.6, and 43 µM, respectively).[2] It is cytotoxic to HL-60 leukemia and SK-BR-3 breast cancer cells (IC_{50}s = 14.7 and 15.9 µM, respectively) but not A549 lung, AZ-521 stomach, or CRL-1579 melanoma cells (IC_{50}s = >20 µM for all).[3] Azadiradione (10 mg/kg) decreases the mutant huntingtin aggregate load in the cortex, striatum, and hippocampus, improves motor function, and increases lifespan in the R6/2 transgenic mouse model of Huntington's disease.[4] It increases the levels of heat shock factor 1 (Hsf1), heat shock protein 70 (Hsp70), and ubiquitin-protein ligase E3A (Ube3a) in the mouse cortex and striatum in the same model. Azadiradione (10 mg/kg) also reduces blood glucose levels and α-amylase activity, as well as serum triglyceride and HDL levels, in a rat model of diabetes induced by streptozotocin (Item No. 13104).[5]

References

1. Gorantla, N.V., Das, R., Chidambaram, H., *et al.* Basic limonoid modulates chaperone-mediated proteostasis and dissolve Tau fibrils. *Sci. Rep.* **10(1)**, 4023 (2020).
2. Alam, A., Haldar, S., Thulasiram, H.V., *et al.* Novel anti-inflammatory activity of epoxyazadiradione against macrophage migration inhibitory factor: Inhibition of tautomerase and proinflammatory activities of macrophage migration inhibitory factor. *J. Biol. Chem.* **287(29)**, 24844-24861 (2012).
3. Kikuchi, T., Ishii, K., Noto, T., *et al.* Cytotoxic and apoptosis-inducing activities of limonoids from the seeds of *Azadirachta indica* (neem). *J. Nat. Prod.* **74(4)**, 866-870 (2011).
4. Singh, B.K., Vatsa, N., Nelson, V.K., *et al.* Azadiradione restores protein quality control and ameliorates the disease pathogenesis in a mouse model of Huntington's disease. *Mol. Neurobiol.* **55(8)**, 6337-6346 (2018).
5. Ramkumar, S., Thulasiram, H.V., and RaviKumar, A. Improvement in serum amylase and glucose levels in diabetic rats on oral administration of bisdemethoxycurcumin from *Curcuma longa* and limonoids from *Azadirachta indica*. *J. Food Biochem.* **45(4)**, e13674 (2021).

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