

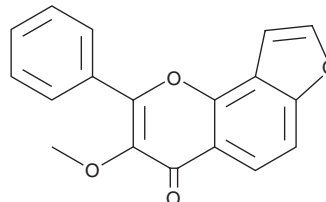
PRODUCT INFORMATION



Karanjin

Item No. 44518

CAS Registry No.: 521-88-0
Formal Name: 3-methoxy-2-phenyl-4H-furo[2,3-h]-1-benzopyran-4-one
Synonym: NSC 335755
MF: $C_{18}H_{12}O_4$
FW: 292.3
Purity: $\geq 98\%$
Supplied as: A solid
Storage: -20°C
Stability: ≥ 4 years
Item Origin: Plant/*Pongamia pinnata* (L.) Pierre



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

Laboratory Procedures

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

Description

Karanjin is a furanoflavanoid that has been found in *P. pinnata* and has diverse biological activities.¹⁻⁵ It scavenges DPPH (Item No. 14805) and ABTS (Item No. 27317) radicals (IC_{50} s = 8,440 and 639.72 $\mu\text{g/ml}$, respectively) and reduces ferric to ferrous iron in a ferric reducing antioxidant power (FRAP) assay (IC_{50} = 0.46 mM).¹ Karanjin inhibits lipoxygenase (LO) and protein tyrosine phosphatase 1B (PTP1B) in cell-free assays (IC_{50} s = 120.6 and 84.5 μM , respectively) and volume-regulated anion channel (VRAC) currents in HEK293 cells (IC_{50} = 10 μM).¹⁻³ It is selectively cytotoxic to MDA-MB-231, HeLa, NCI H460, and HepG2 cancer cells over mouse embryonic fibroblasts (MEFs; IC_{50} s = 50.42, 47.05, 48.04, 62.95, and 624.26 $\mu\text{g/ml}$, respectively).⁴ Karanjin (50 mg/kg) reduces xylene-induced ear edema in rats and ovariectomy-induced bone loss in mice.^{1,5} It also decreases blood glucose levels in diabetic *db/db* mice.²

References

1. Rekha, M.J., Bettadaiah, B.K., Muthukumar, S.P., *et al.* Synthesis, characterization and anti-inflammatory properties of karanjin (*Pongamia pinnata* seed) and its derivatives. *Bioorg. Chem.* **106**, 104471 (2021).
2. Tamrakar, A.K., Yadav, P.P., Tiwari, P., *et al.* Identification of pongamol and karanjin as lead compounds with antihyperglycemic activity from *Pongamia pinnata* fruits. *J. Ethnopharmacol.* **118(3)**, 435-439 (2008).
3. Xue, Y., Li, H., Zhang, Y., *et al.* Natural and synthetic flavonoids, novel blockers of the volume-regulated anion channels, inhibit endothelial cell proliferation. *Pflugers Arch.* **470(10)**, 1473-1483 (2018).
4. Roy, R., Pal, D., Sur, S., *et al.* Pongapin and Karanjin, furanoflavanoids of *Pongamia pinnata*, induce G2/M arrest and apoptosis in cervical cancer cells by differential reactive oxygen species modulation, DNA damage, and nuclear factor kappa-light-chain-enhancer of activated B cell signaling. *Phytother. Res.* **33(4)**, 1084-1094 (2019).
5. Ma, Q., Li, C., Lin, G., *et al.* Karanjin counteracts OVX-induced bone loss by dual regulating bone remodeling. *Phytomedicine* **146**, 157099 (2025).

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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