# PRODUCT INFORMATION

## Karanjin

*Item No. 44518*

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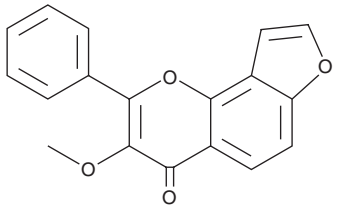
| **CAS Registry No.:** | 521-88-0 |
| **Formal Name:** | 3-methoxy-2-phenyl-4H-furo[2,3-h]-1-benzopyran-4-one |
| **Synonym:** | NSC 335755 |
| **MF:** | $C_{18}H_{12}O_4$ |
| **FW:** | 292.3 |
| **Purity:** | ≥98% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years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





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