

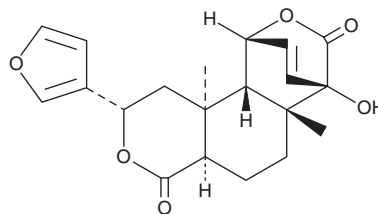
# PRODUCT INFORMATION



## Columbin

Item No. 24105

**CAS Registry No.:** 546-97-4  
**Formal Name:** 9-(3-furanyl)-1R,4R,4aR,5,6,6aR,9S,10,10aS,10bS-decahydro-4-hydroxy-4a,10a-dimethyl-1,4-etheno-3H,7H-benzo[1,2-c:3,4-c']dipyran-3,7-dione  
**MF:** C<sub>20</sub>H<sub>22</sub>O<sub>6</sub>  
**FW:** 358.4  
**Purity:** ≥98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Columbin is supplied as a crystalline solid. A stock solution may be made by dissolving the columbin in the solvent of choice, which should be purged with an inert gas. Columbin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of columbin in ethanol is approximately 0.03 mg/ml and approximately 30 mg/ml in DMSO and DMF.

### Description

Columbin is a diterpenoid furanolactone isolated from *J. columba*, *A. albida*, and *T. bakis* that has diverse biological activities.<sup>1-4</sup> It inhibits the growth of *T. brucei* *in vitro* and induces complete parasite clearance in *T. brucei*-infected mice when administered at a dose of 25 mg/kg per day for three days.<sup>1</sup> Columbin selectively inhibits COX-2 over COX-1 (EC<sub>50</sub>s = 53.1 and 327 μM, respectively) and reduces carrageenan-induced paw edema in rats in a dose-dependent manner.<sup>2</sup> Dietary feeding of columbin (4, 20, and 100 ppm) reduces the number of lesions in a rat model of azoxymethane-induced colon carcinogenesis.<sup>3</sup> Columbin (20-40 mg/kg per day) also reduces sleeping time induced by a mixture of urethane and α-chloralose but prolongs sleeping time induced by hexobarbital in mice.<sup>4</sup>

### References

1. Nok, A.J., Sallau, B.A., Onyike, E., *et al.* Columbin inhibits cholesterol uptake in bloodstream forms of *Trypanosoma brucei*-A possible trypanocidal mechanism. *J. Enzyme Inhib. Med. Chem.* **20(4)**, 365-368 (2005).
2. Abdelwahab, S.I., Koko, W.S., Mohamed Elhassan Taha, M., *et al.* *In vitro* and *in vivo* anti-inflammatory activities of columbin through the inhibition of cyclooxygenase-2 and nitric oxide but not the suppression of NF-κB translocation. *Eur. J. Pharmacol.* **678(1-3)**, 61-70 (2012).
3. Kohno, H., Maeda, M., Tanino, M., *et al.* A bitter diterpenoid furanolactone columbin from *Calumbae Radix* inhibits azoxymethane-induced rat colon carcinogenesis. *Cancer Lett.* **183(2)**, 131-139 (2002).
4. Wada, K., Kurihara, T., Yagi, M., *et al.* Columbin isolated from *calumbae radix* affects the sleeping time of anesthetized mice. *Biol. Pharm. Bull.* **18(4)**, 634-636 (1995).

#### 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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