

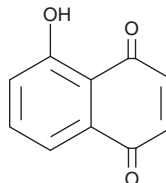
PRODUCT INFORMATION



Juglone

Item No. 16216

CAS Registry No.: 481-39-0
Formal Name: 5-hydroxy-1,4-naphthalenedione
Synonyms: 5-Hydroxy-1,4-naphthoquinone,
NSC 34266, NSC 153189, NSC 622948
MF: C₁₀H₆O₃
FW: 174.2
Purity: ≥95%
UV/Vis.: λ_{max}: 209, 249, 424 nm
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

Juglone is supplied as a crystalline solid. A stock solution may be made by dissolving the juglone in the solvent of choice, which should be purged with an inert gas. Juglone is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of juglone in these solvents is approximately 10 mg/ml.

Description

Juglone is a natural naphthoquinone found in the black walnut (*J. nigra*) and other plants in the Juglandaceae family. It has allelopathic actions, suppressing growth, photosynthesis, and respiration in plants and other organisms, although some bacteria can metabolize juglone.^{1,2} Juglone also irreversibly inhibits peptidyl-prolyl *cis/trans* isomerases of the parvulin family, including human Pin1, yeast Ess1/Ptf1, and *E. coli* parvulin (K_i = 55.9 nM).³ Juglone also blocks transcription by RNA polymerases I, II, and III (IC₅₀s = 2-7 μM) and attenuates kidney fibrosis in rats treated with unilateral ureteral obstruction, both through Pin1-independent mechanisms.^{4,5}

References

1. Hejl, A.A., Einhellig, F.A., and Rasmussen, J.A. Effects of juglone on growth, photosynthesis, and respiration. *J. Chem. Ecol.* **19(3)**, 559-568 (1993).
2. Williamson, G.B. and Weidenhamer, J.D. Bacterial degradation of juglone: Evidence against allelopathy? *J. Chem. Ecol.* **16(5)**, 1739-1742 (1990).
3. Hennig, L., Christner, C., Kipping, M., et al. Selective inactivation of parvulin-like peptidyl-prolyl *cis/trans* isomerases by juglone. *Biochemistry* **37(17)**, 5953-5960 (1998).
4. Chao, S.H., Greenlead, A.L., and Price, D.H. Juglone, an inhibitor of the peptidyl-prolyl isomerase Pin1, also directly blocks transcription. *Nucleic Acids Res.* **29(3)**, 767-773 (2001).
5. Reese, S., Vidyasagar, A., Jacobson, L., et al. The Pin 1 inhibitor juglone attenuates kidney fibrogenesis via Pin 1-independent mechanisms in the unilateral ureteral occlusion model. *Fibrogenesis Tissue Repair* **3**, 1 (2010).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/30/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM