

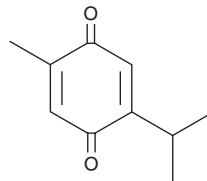
PRODUCT INFORMATION



Thymoquinone

Item No. 15039

CAS Registry No.: 490-91-5
Formal Name: 2-methyl-5-(1-methylethyl)-2,5-cyclohexadiene-1,4-dione
Synonym: NSC 2228
MF: C₁₀H₁₂O₂
FW: 164.2
Purity: ≥98%
UV/Vis.: λ_{max}: 253 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

Thymoquinone is supplied as a crystalline solid. A stock solution may be made by dissolving the thymoquinone in the solvent of choice, which should be purged with an inert gas. Thymoquinone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of thymoquinone in ethanol and DMF is approximately 16 mg/ml and in DMSO it is approximately 14 mg/ml.

Thymoquinone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, thymoquinone should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Thymoquinone has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

The black seeds of *Nigella* have long been ingested to treat a broad range of diseases, including inflammation and cancer.¹ Thymoquinone is a natural phytochemical isolated from the seeds of *N. sativa*.¹ It has anti-inflammatory effects, blocking the synthesis of leukotrienes.¹⁻² Thymoquinone inhibits the growth of leukemia cells (IC₅₀ = 1.5 µg/ml), inducing apoptosis by down-regulating the expression of Bcl-2 while up-regulating Bax expression.³ In addition to blocking cell proliferation and triggering apoptosis, thymoquinone (15 µM) suppresses STAT3-regulated gene expression and prevents angiogenesis.⁴⁻⁵

References

1. Randhawa, M.A. and Alghamdi, M.S. Anticancer activity of *Nigella sativa* (black seed) - A review. *Am. J. Chin. Med.* **39(6)**, 1075-1091 (2011).
2. Ragheb, A., Attia, A., Eldin, W.S., et al. The protective effect of thymoquinone, an anti-oxidant and anti-inflammatory agent, against renal injury: A review. *Saudi J. Kidney Dis. Transpl.* **20(5)**, 741-752 (2009).
3. Salim, L.Z., Mohan, S., Othman, R., et al. Thymoquinone induces mitochondria-mediated apoptosis in acute lymphoblastic leukaemia *in vitro*. *Molecules* **18(9)**, 11219-11240 (2013).
4. Banerjee, S., Padhye, S., Azmi, A., et al. Review on molecular and therapeutic potential of thymoquinone in cancer. *Nutr. Cancer* **62(7)**, 938-946 (2010).
5. Li, F., Rajendran, P., and Sethi, G. Thymoquinone inhibits proliferation, induces apoptosis and chemosensitizes human multiple myeloma cells through suppression of signal transducer and activator of transcription 3 activation pathway. *Br. J. Pharmacol.* **161(3)**, 541-554 (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, 12/12/2022

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