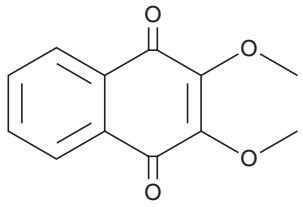
PRODUCT INFORMATION

DMNQ

Item No. 19571

CAS Registry No.: 6956-96-3
Formal Name: 2,3-dimethoxy-1,4-naphthalenedione
Synonyms: NSC 69355
MF: $C_{12}H_{10}O_4$
FW: 218.2
Purity: ≥99%
UV/Vis.: λ_{max}: 251, 280 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Protect from light and moisture



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

Laboratory Procedures

DMNQ is supplied as a crystalline solid. A stock solution may be made by dissolving the DMNQ in the solvent of choice. DMNQ is soluble in the organic solvents DMSO and methanol.

Description

DMNQ is a 1,4-naphthoquinone that acts as a redox-cycling agent, typically increasing intracellular superoxide and hydrogen peroxide formation.[1-3] The amount of oxidative stress is proportional to the amount of DMNQ applied and can alter diverse cellular parameters, including signal transduction, mitochondrial function, and gene expression.[3-5]

References

1. Kaas, G.E.N., Duddy, S.K., and Orrenius, S. Activation of hepatocyte protein kinase C by redox-cycling quinones. *Biochem. J.* **260(2)**, 499-507 (1989).
2. Gant, T.W., Rao, D.N., Mason, R.P., *et al.* Redox cycling and sulphydryl arylation; their relative importance in the mechanism of quinone cytotoxicity to isolated hepatocytes. *Chem. Biol. Interact.* **65(2)**, 157-173 (1988).
3. Shi, M.M., Kugelman, A., Iwamoto, T., *et al.* Quinone-induced oxidative stress elevates glutathione and induces γ-glutamylcysteine synthetase activity in rat lung epithelial L2 cells. *J. Biol. Chem.* **269(42)**, 26512-26517 (1994).
4. Klotz, L.-O., Hou, X., and Jacob, C. 1,4-Naphthoquinones: From oxidative damage to cellular and inter-cellular signaling. *Molecules* **19(9)**, 14902-14918 (2014).
5. Chacko, B.K., Zhi, D., Darley-Usmar, V.M., *et al.* The bioenergetic health index is a sensitive measure of oxidative stress in human monocytes. *Redox Biol.* **8**, 43-50 (2016).

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