

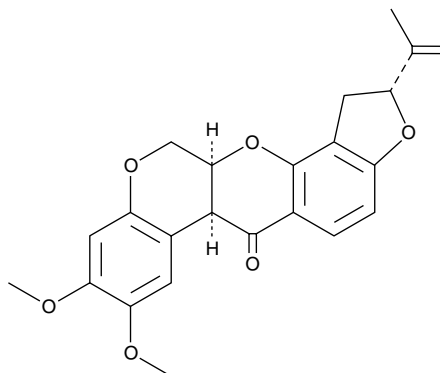
Product Information



Rotenone

Item No. 13995

CAS Registry No.: 83-79-4
Formal Name: (2R,6aS,12aS)-1,2,12,12a-tetrahydro-8,9-dimethoxy-2-(1-methylethenyl)-[1]benzopyrano[3,4-b]furo[2,3-h][1]benzopyran-6(6aH)-one
Synonyms: Nicouline, NSC 8505, NSC 26258, Tubatoxin
MF: C₂₃H₂₂O₆
FW: 394.4
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 236, 294 nm



Laboratory Procedures

For long term storage, we suggest that rotenone be stored as supplied at -20°C. It should be stable for at least two years.

Rotenone is supplied as a crystalline solid. A stock solution may be made by dissolving the rotenone in the solvent of choice. Rotenone is soluble in organic solvents such as ethanol, DMSO, and chloroform, which should be purged with an inert gas. The solubility of rotenone in ethanol is approximately 5 mg/ml and approximately 50 mg/ml in DMSO and chloroform.

Rotenone is a potent inhibitor of complex I of the mitochondrial electron transport chain, inhibiting NADH dehydrogenase activity with an IC₅₀ value of 5.1 nM.¹ In animals, it drives neurodegeneration, resulting in features similar to some behavioral and neuropathological aspects of Parkinson's disease.²⁻⁴ This naturally-occurring isoflavonoid is commonly used as an insecticide, piscicide, and pesticide.⁵

References

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2. Uversky, V.N. Neurotoxicant-induced animal models of Parkinson's disease: Understanding the role of rotenone, maneb and paraquat in neurodegeneration. *Cell Tissue Res.* **318**(1), 225-241 (2004).
3. Freestone, P.S., Chung, K.K., Guatteo, E., *et al.* Acute action of rotenone on nigral dopaminergic neurons--involvement of reactive oxygen species and disruption of Ca²⁺ homeostasis. *Eur. J. Neurosci.* **30**(10), 1849-1859 (2009).
4. Xiong, N., Long, X., Xiong, J., *et al.* Mitochondrial complex I inhibitor rotenone-induced toxicity and its potential mechanisms in Parkinson's disease models. *Crit. Rev. Toxicol.* **42**(7), 613-632 (2012).
5. Soloway, S.B. Naturally occurring insecticides. *Environ. Health Perspect.* **14**, 109-117 (1976).

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