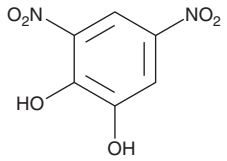
PRODUCT INFORMATION

3,5-Dinitrocatechol

Item No. 29180

CAS Registry No.: 7659-29-2
Formal Name: 3,5-dinitro-1,2-benzenediol
Synonym: OR-486
MF: $C_6H_4N_2O_6$
FW: 200.1
Purity: ≥98%
UV/Vis.: λ_{max}: 214, 272, 339 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

3,5-Dinitrocatechol is supplied as a crystalline solid. A stock solution may be made by dissolving the 3,5-dinitrocatechol in water. The solubility of 3,5-dinitrocatechol in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

3,5-Dinitrocatechol is a potent catechol O-methyltransferase (COMT) inhibitor (IC_{50} = 12 nM).[1] It is selective for COMT over tyrosine hydroxylase, dopamine β-hydroxylase, dopamine decarboxylase, monoamine oxidase A (MAO-A), and MAO-B (IC_{50}s = >14 µM for all). 3,5-Dintrocatechol (30 mg/kg), in combination with L-DOPA (Item No. 13248) and carbidopa (Item No. 23783), reduces 3-O-methyldopa (3-OMD) levels in rat serum, compared with control animals receiving only L-DOPA and carbidopa. Chronic administration of 3,5-dinitrocatechol (15 mg/kg per day for seven days) induces COMT-dependent thermal hyperalgesia and increases preference for dark in a light/dark preference test, indicating anxiety-like behavior, in rats, effects that can be prevented by the β-adrenergic receptor antagonist propranolol (Item No. 23349).[2]

References

1. Nissinen, E., Lindén, I.-B., Schultz, E., *et al.* Inhibition of catechol-O-methyltransferase activity by two novel disubstituted catechols in the rat. *Eur. J. Pharmacol.* **153(2-3)**, 263-269 (1988).
2. Kline, R.H., IV, Exposto, F.G., O'Buckley, S.C., *et al.* Catechol-O-methyltransferase inhibition alters pain and anxiety-related volitional behaviors through activation of β-adrenergic receptors in the rat. *Neuroscience* **290**, 561-569 (2015).

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