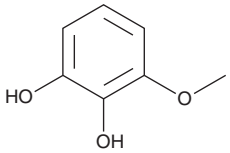
PRODUCT INFORMATION

3-Methoxycatechol

Item No. 36535

CAS Registry No.: 934-00-9
Formal Name: 3-methoxy-1,2-benzenediol
Synonyms: 1,2-Dihydroxy-3-methoxybenzene, 3-Methoxypyrocatechol, NSC 66525, Pyrogallol 1-monomethyl ether
MF: $C_7H_8O_3$
FW: 140.1
Purity: ≥98%
Supplied as: A 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-Methoxycatechol is supplied as a solid. A stock solution may be made by dissolving the 3-methoxycatechol in the solvent of choice, which should be purged with an inert gas. 3-Methoxycatechol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 3-methoxycatechol in DMF is approximately 3 mg/ml and approximately 2 mg/ml in ethanol and DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 3-methoxycatechol can be prepared by directly dissolving the 3-methoxycatechol in aqueous buffers. The solubility of 3-methoxycatechol in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

3-Methoxycatechol is a lignan-derived phenol.[1] It is an agonist of G protein-coupled receptor 35 (GPR35) with an EC_{50} value of 147 µM in a dynamic mass redistribution (DMR) assay using HT-29 cells.[2] Dietary administration of 3-methoxycatechol (2%) alone, or in a model of multiorgan carcinogenesis induced by nitrosamines, promotes esophageal carcinogenesis in rats.[3] 3-Methoxycatechol has been used as a precursor in the enzymatic synthesis of the phenols pyrogallol (Item No. 20347) and purpurogallin (Item No. 29689) and in the electro-organic synthesis of coumestan derivatives.[1,4]

References

1. Zhang, S., Xiaofeng, W., and Xiao, Y. Conversion of lignin-derived 3-methoxycatechol to the natural product purpurogallin using bacterial P450 GcoAB and laccase CueO. *Appl. Microbiol. Biotechnol.* **106(2),** 593-603 (2022).
2. Deng, H. and Fang, Y. The three tatecholics benserazide, catechol and pyrogallol are GPR35 agonists. *Pharmaceuticals (Basel)* **6(4),** 500-509 (2013).
3. Hirose, M., Tnaka, H., Takahashi, S., *et al.* Effects of sodium nitrite and catechol, 3-methoxycatechol, or butylated hydroxyanisole in combination in a rat multiorgan carcinogenesis model. *Cancer Res.* **53(1),** 32-37 (1993).
4. Golabi, S.M. and Nematollahi, D. Electrochemical study of catechol and some 3-substituted catechols in the prescence of 4-hydroxy coumarin: Application to the electro-organic synthesis of new coumestan derivatives. *J. Electroanal. Chem.* **420(1-2),** 127-134 (1997).

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