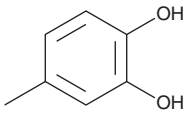
PRODUCT INFORMATION

4-Methylcatechol

Item No. 36429

CAS Registry No.:	452-86-8
Formal Name:	4-methyl-1,2-benzenediol
Synonyms:	1,2-Dihydroxy-4-methylbenzene, 3,4-Dihydroxytoluene, Homocatechol, 2-Hydroxy-4-methylphenol, 4-Methylpyrocatechol, NSC 17489, *p*-Methylcatechol
MF:	$C_7H_8O_2$
FW:	124.1
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

4-Methylcatechol is supplied as a solid. A stock solution may be made by dissolving the 4-methylcatechol in the solvent of choice, which should be purged with an inert gas. 4-Methylcatechol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 4-methylcatechol in these solvents is approximately 3, 20, and 25 mg/ml, respectively.

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 4-methylcatechol can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 4-methylcatechol in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-Methylcatechol is a methylcatechol with diverse biological activities and an active metabolite of the flavonoid quercetin (Item No. 10005169).[1-3] It is formed from quercetin by gut microbiota.[1] 4-Methylcatechol inhibits migration of, and induces cell cycle arrest in the G_2/M phase, production of reactive oxygen species (ROS), and apoptosis in, 1205Lu melanoma cells when used at concentrations of 10 and 25 µg/ml.[2] It induces relaxation of isolated rat aortic rings and mesenteric arteries (EC_{50}s = 49.1 and 21.2 µM, respectively) and reduces blood pressure in spontaneously hypertensive stroke-prone (SHRSP) rats.[3]

References

1. Zhao, L., Qi, Z., Yi, L., *et al.* The interaction between gut microbiota and flavonoid extract from *Smilax glabra* Roxb. and its potent alleviation of fatty liver. *Food Funct.* **12(17),** 7836-7850 (2021).
2. Payton, F., Bose, R., Alworth, W.L., *et al.* 4-methylcatechol-induced oxidative stress induces intrinsic apoptotic pathway in metastatic melanoma cells. *Biochem. Pharmacol.* **81(10),** 1211-1218 (2011).
3. Pourová, J., Najmanová, I., Vopršalová, M., *et al.* Two flavonoid metabolites, 3,4-dihydroxyphenylacetic acid and 4-methylcatechol, relax arteries *ex vivo* and decrease blood pressure *in vivo*. *Vascul. Pharmacol.* **111,** 36-43 (2018).

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