

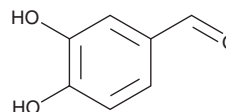
PRODUCT INFORMATION



3,4-Dihydroxybenzaldehyde

Item No. 27547

CAS Registry No.: 139-85-5
Formal Name: 3,4-dihydroxy-benzaldehyde
Synonyms: NSC 22961, Protocatechualdehyde, Protocatechuic aldehyde
MF: C₇H₆O₃
FW: 138.1
Purity: ≥98%
UV/Vis.: λ_{max}: 234, 280, 315 nm
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

3,4-Dihydroxybenzaldehyde is supplied as a solid. A stock solution may be made by dissolving the 3,4-dihydroxybenzaldehyde in the solvent of choice, which should be purged with an inert gas. 3,4-Dihydroxybenzaldehyde is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 3,4-dihydroxybenzaldehyde in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

3,4-Dihydroxybenzaldehyde is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3,4-dihydroxybenzaldehyde should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 3,4-Dihydroxybenzaldehyde has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

3,4-Dihydroxybenzaldehyde is a polyphenol that has been found in *S. miltiorrhiza* and has diverse biological activities, including antibacterial, antioxidative, and anticancer properties.¹⁻⁴ It is active against methicillin-resistant *S. aureus* (MRSA) when used at a concentration of 0.01 µg/ml.² It prevents hexavalent chromium-induced formation of reactive oxygen species (ROS) and reactive nitrogen species (RNS) in a concentration-dependent manner and increases glutathione (GSH) levels in isolated human erythrocytes.¹ 3,4-Dihydroxybenzaldehyde selectively inhibits human DNA topoisomerase II (IC₅₀ = 150 µM) over human topoisomerase I and a variety of mammalian polymerases (IC_{50s} = >200 µM).³ It inhibits proliferation of HT-29 cells when used at a concentration of 362 µM but not HCT116 cells at a concentration of 100 µM.^{3,4}

References

1. Husain, N. and Mahmood, R. *Toxicol. In Vitro* **50**, 293-304 (2018).
2. Rempe, C.S., Burris, K.P., Woo, H.L., et al. *PLoS One* **10(5)**, e0123925 (2015).
3. Kuriyama, I., Nakajima, Y., Nishida, H., et al. *Mol. Med. Rep.* **8(2)**, 535-542 (2013).
4. Zhong, S., Li, Y.-G., Ji, D.-F., et al. *Molecules* **21(7)**, 934 (2016).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/26/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM