

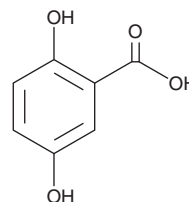
PRODUCT INFORMATION



Gentisic Acid

Item No. 27615

CAS Registry No.: 490-79-9
Formal Name: 2,5-dihydroxy-benzoic acid
Synonyms: Carboxyhydroquinone, 5-Hydroxysalicylic Acid, NSC 27224, NSC 49098, NSC 78825
MF: $C_7H_6O_4$
FW: 154.1
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 214, 237, 337 nm
Supplied as: A crystalline 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

Gentisic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the gentisic acid in the solvent of choice, which should be purged with an inert gas. Gentisic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of gentisic acid in these solvents is approximately 10, 3, and 2 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 gentisic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of gentisic acid in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Gentisic acid is a benzoic acid that has been found in *Gentiana* and an active metabolite of aspirin (Item No. 70260) with diverse biological activities.¹⁻⁵ It decreases radiation-induced production of thiobarbituric acid reactive substances (TBARS), hydrogen peroxide, and protein carbonyls, increases superoxide dismutase activity, and prevents hemolysis in isolated human erythrocytes when used at concentrations ranging from 5 to 100 μM .¹ Gentisic acid (1-10 μM) inhibits LDL oxidation and formation of cholesterol ester hydroperoxides in isolated human plasma.² It induces relaxation of isolated guinea pig trachea ($\text{EC}_{50} = 20 \mu\text{M}$), an effect that is reduced by the large-conductance calcium-activated potassium channel blocker charybdotoxin (Item No. 24115).³ Gentisic acid (10 and 100 mg/kg) reduces cardiac hypertrophy and fibrosis and pulmonary remodeling, suppresses the renin-angiotensin-aldosterone system, and inhibits cardiac dysfunction in a mouse model of transverse aortic constriction-induced cardiac hypertrophy.⁴ It also prevents cardiovascular collapse and lactic acidemia in a canine model of *P. aeruginosa*-induced septic shock.⁵

References

1. Joshi, R.P., Gangabhairathi, R., Venu, S., et al. *Free Radic. Res.* **46**(1), 11-20 (2012).
2. Ashidate, K., Kawamura, M., Mimura, D., et al. *Eur. J. Pharmacol.* **513**(3), 173-179 (2005).
3. Cunha, J.F., Campestrini, F.D., Calixto, J.B., et al. *Braz. J. Med. Biol. Res.* **34**(4), 381-388 (2001).
4. Sun, S., Kee, H.J., Ryu, Y.L., et al. *Sci. Rep.* **9**(1), 3018 (2019).
5. Mink, S., Roy Chowdhury, S.K., Gotes, J., et al. *Intensive Care Med.* **4**(1), 24 (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.

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