

## 3,4-Dihydroxybenzoic acid Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)

### [ Product Information ]

**Name:** 3,4-Dihydroxybenzoic acid

**Catalog No.:** CFN97568

**Cas No.:** 99-50-3

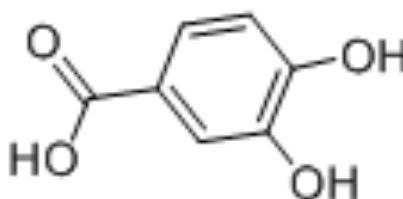
**Purity:** >=98%

**M.F:** C<sub>7</sub>H<sub>6</sub>O<sub>4</sub>

**M.W:** 154.12

**Physical Description:** Powder

**Synonyms:** Catechol-4-carboxylic acid;Protocatechuic acid.



### [ Intended Use ]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Others.

### [ Source ]

The herbs of *Onychium japonicum*.

### [ Biological Activity or Inhibitors ]

3,4-Dihydroxybenzoic acid is discussed to represent antioxidative food components in a human diet rich in fruits and vegetables, and has been shown to prevent carcinogenesis or antitumor growth in vivo, it has apoptotic effect on human gastric carcinoma cells involving JNK/p38 MAPK signaling activation.<sup>[1]</sup>

3,4-Dihydroxybenzoic acid can prevent Abeta (25-35)-induced neuronal cell damage by interfering with the increase of  $[Ca^{2+}]_i$ , and then by inhibiting glutamate release, generation of ROS and caspase-3 activity.<sup>[2]</sup>

3,4-Dihydroxybenzoic acid has protection against Adriamycin cytotoxicity and inhibition of DNA topoisomerase II activity. <sup>[3]</sup>

3,4-Dihydroxybenzoic acid has nematocidal activity against *Meloidogyne incognita*.<sup>[4]</sup>

3,4-Dihydroxybenzoic acid shows significant antioxidant using DPPH and antimicrobial activities.<sup>[5]</sup>

## **[ Solvent ]**

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

## **[ HPLC Method ]<sup>[6]</sup>**

Mobile phase: Methanol- 1%Acetic acid H<sub>2</sub>O=5:95 ;

Flow rate: 1.5 ml/min;

Column temperature: 40 °C;

The wave length of determination: 280 nm.

## **[ Storage ]**

2-8°C, Protected from air and light, refrigerate or freeze.

## **[ References ]**

[1] Lin H H, Chen J H, Huang C C, *et al. Int. J. Cancer*, 2007, 120(11):2306-16.

[2] Ban J Y, Cho S O, Jeon S Y, *et al. Neurosci. Lett.*, 2007, 420(2):184-8.

- [3] De Graff W G, Jr M L, Mitchell J B, *et al.* *Int. J. Oncol.*, 2003, 23(1):159-63.
- [4] Nguyen D M C, Seo D J, Kim K Y, *et al.* *Microb. Pathogenesis*, 2013, 59-60(3):52-9.
- [5] Syafni N, Putra D P, Arbain D. *Indonesian Journal of Chemistry*, 2012, 12(3):273-8.
- [6] Zhang R, Zhang A H, Zhang Z X. *Lishizhen Medicine & Materia Medica Research*, 2006, 17(7):1209-11

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