

Vanillin Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Vanillin

Catalog No.: CFN90463

Cas No.: 121-33-5

Purity: >=98%

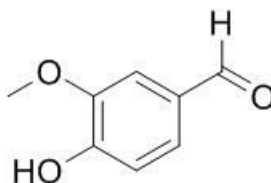
M.F: C₈H₈O₃

M.W: 152.14

Physical Description: Powder

Synonyms:2-Methoxy-4-formylphenol;3-Methoxy-4-hydroxybenzaldehyde;

4-Formyl-2-methoxyphenol;4-Hydroxy-3-methoxybenzaldehyde;4-Hydroxy-5-methoxybenzaldehyde;4-hydroxy-m-anisaldehyd;4-Hydroxy-m-anisaldehyde.



[Intended Use]

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

[Source]

The roots of *Beta vulgaris*.

[Biological Activity or Inhibitors]

Vanillin, the principle flavour component of vanilla, has antimicrobial activity against *Escherichia coli*, *Lactobacillus plantarum* and *Listeria innocua*, it is primarily a membrane-active compound, resulting in the dissipation of ion gradients and the inhibition of respiration, the extent to which is species-specific, these effects initially do not halt the production of ATP; understanding the mode of action of natural antimicrobials may facilitate their application as natural food preservatives, particularly for their potential use in preservation systems employing multiple hurdles. ^[1]

Vanillin, a food additive, has been evaluated as a potential agent to treat sickle cell anemia. ^[2]

Vanillin, an acknowledged antimutagen, anticlastogen and anticarcinogen, it is an inhibitor of non-homologous DNA end-joining (NHEJ). ^[3]

Vanillin has been shown to suppress cancer cell migration and metastasis in a mouse model, the inhibition of PI3K activity is a mechanism underlying the inhibitory effect on cancer cell migration, and the presence of an aldehyde or ketone group in the vanillin structure was important for this inhibition; vanillin also inhibits angiogenesis. ^[4]

Vanillin has protective effect on radiation-induced micronuclei and chromosomal aberrations in V79 cells, it is an anticlastogenic agent. ^[5]

[Solvent]

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

[HPLC Method] ^[6]

Mobile phase: Methanol -H₂O=60:40 ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 231 nm.

[Storage]

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

[References]

- [1] Fitzgerald D J, Stratford M, Gasson M J, *et al. J. Appl. Microbiol.*, 2004, 97(1):104-13.
- [2] Abraham D J, Mehanna A S, Wireko F C, *et al. Blood*, 1991, 77(6):1334-41.
- [3] Nikolajewski H E, Dähne S, Hirsch B, *et al. Nucleic Acids Res.*, 2003, 31(19):5501-12.
- [4] Lirdprapamongkol K, Kramb J P, Suthiphongchai T, *et al. J.Agr. Food Chem.*, 2009, 57(8):3055-63.
- [5] Keshava C, Keshava N, Ong T M, *et al. Mutat.Res.-Fund. Mol.M.*, 1998, 397(2):149-59.
- [6] Waliszewski K N, Pardio V T, Ovando S L. *Food Chem.*, 2007, 101(3):1059-62.

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