*Natural Products*

ChemFaces

# Neohesperidin Datasheet

4th Edition (Revised in July, 2016)

## [ Product Information ]

**Name:** Neohesperidin

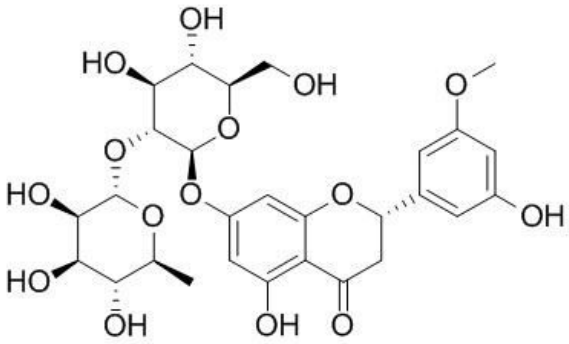
**Catalog No.:** CFN99125

**Cas No.:** 13241-33-3

**Purity:** > 98%

**M.F:** $C_{28}H_{34}O_{15}$

**M.W:** 610.56



**Physical Description:** Powder

**Synonyms:**(2S)-7-[[(2S,3R,4S,5S,6R)-4,5-dihydroxy-6-(hydroxymethyl)-3-[[(3R,4R,5R,6S)-3,4,5-trihydroxy-6-methyl-2-oxanyl]oxy]-2-oxanyl]oxy]-5-hydroxy-2-(3-hydroxy-4-methoxyphenyl)-3,4-dihydro-2H-1-benzopyran-4-one.

## [ Intended Use ]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Ingredient in supplements, beverages;
7. Others.

## [ Source ]

The peel of *Citrus aurantium L.*

## [ Biological Activity or Inhibitors]

Neohesperidin is a natural new nutrition sweetener, widely existing in plants of dry citrus peel, which can be derived from extraction; since the sweetness is 1,300-1,500 times greater than that of sugar, neohesperidin are widely used in fruit juices, wines, beverages, bakeries and pharmaceutical formulations, and are particularly suitable for consumption by diabetic patients.[1]

Neohesperidin exhibits antioxidant activity ($IC_{50}$=22.31ug/mL) in the 1,1-diphenyl -2-picryldydrazyl (DPPH) radical-scavenging assay; neohesperidin (50mg/kg) significantly inhibits 55.0% of HCl/ethanol-induced gastric lesions, and increases the mucus content; In pylorus ligated rats, neohesperidin (50 mg/kg) significantly decreases the volume of gastric secretion and gastric acid output, and increases the pH; suggests that neohesperidin isolated from PF may be useful for the treatment and/or protection of gastritis. [2]

Neohesperidin has free radical scavenging activity, can induce cellular apoptosis in human breast adenocarcinoma MDA-MB-231 cells via activating the Bcl-2/Bax-mediated signaling pathway.[3]

Neohesperidin can attenuate cerebral ischemia-reperfusion injury via the inhibition of neuronal and oxidative stress through the regulation of the apoptotic pathway and activating the Akt/Nrf2/HO-1 pathway.[4]

Neohesperidin and hesperidin are the major flavanones isolated from bittersweet orange, they have potent anti-inflammatory effects in various inflammatory models, they significantly aggravate gastric damage caused by indomethacin administration as evidenced by increased ulcer index and histopathological changes of stomach.[5]

Neohesperidin, Albiflorin, and Aloeemodin have a potent inhibitory effect on Aβ1-40 and Aβ1-42 aggregation, and have neuroprotective effect on primary hippocampal cells against β-Amyloid induced toxicity.[6]

## [ Solvent ]

Pyridine, DMSO, Ethanol, Methanol, Hot water.

## [ HPLC Method ][7]

Mobile phase: Acetonitrile- 0.2% Formic acid H2O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 40 ℃;

The wave length of determination: 285 nm.

## [ Storage ]

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

## [ References ]


[1] Yang H J, Jeong S Y, Choi N S, *et al. 생명과학회지, 2010,11, 1691-6.*

[2] Lee J H, Lee S H, Kim Y S, *et al. Phytother. Res., 2009, 23(12):1748–53.*

[3] Xu F, Zang J, Chen D, *et al. Nat. Prod .Commun., 2012, 7(11):1475-8.*

[4] Wang J J, Cui P. *J. Asian Nat. Prod. Res., 2013, 15(9):1023-37.*

[5] Hamdan D I, Mahmoud M F, Wink M, *et al. Environ. Toxicol. Phar., 2014, 37(3):907-15.*

[6] Ho S L, Poon C Y, Lin C, *et al. Curr. Alzheimer Res., 2015, 12(5):424-33.*

[7] Wang Q H, Gao S H, Xiong X J, *et al. Academic Journal of Second Military Medical University, 2015, 36(8):917-21.*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