

# PRODUCT INFORMATION



## Neohesperidin

Item No. 23028

CAS Registry No.: 13241-33-3

Formal Name: (2S)-7-[[2-O-(6-deoxy- $\alpha$ -L-mannopyranosyl)- $\beta$ -D-glucopyranosyl]oxy]-2,3-dihydro-5-hydroxy-2-(3-hydroxy-4-methoxyphenyl)-4H-1-benzopyran-4-one

Synonyms: Hesperetin 7-neohesperidoside, NSC 31048

MF:  $C_{28}H_{34}O_{15}$

FW: 610.6

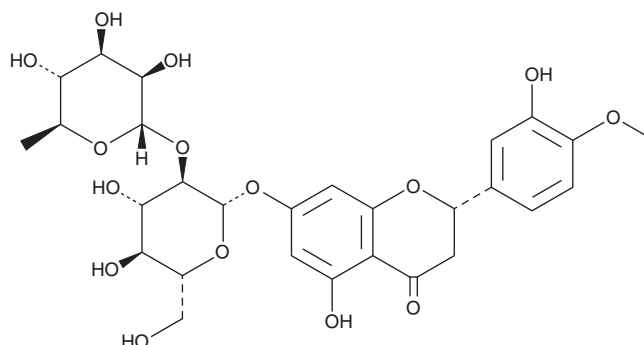
Purity:  $\geq 98\%$

UV/Vis.:  $\lambda_{max}$ : 285 nm

Supplied as: A crystalline solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 4$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Neohesperidin is supplied as a crystalline solid. A stock solution may be made by dissolving the neohesperidin in the solvent of choice, which should be purged with an inert gas. Neohesperidin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of neohesperidin in these solvents is approximately 5 and 3 mg/ml, respectively.

Neohesperidin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, neohesperidin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Neohesperidin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Neohesperidin is a flavonoid found in citrus fruit peel that has diverse biological activities.<sup>1-3</sup> *In vitro*, it inhibits osteoclast differentiation, bone resorption, calcium oscillations, and activation of NF- $\kappa$ B and nuclear factor of activated T cells (NFAT) by receptor activator of NF- $\kappa$ B ligand (RANKL).<sup>1</sup> *In vivo*, neohesperidin administration protects ovariectomized mice from bone loss. Neohesperidin acts as a hypolipidemic agent, reducing lipid accumulation in HepG2 cells and reversing hyperlipidemia in a mouse model of diet-induced obesity.<sup>2</sup> In a mouse model of diabetes, neohesperidin increases glucose tolerance and decreases insulin resistance while simultaneously decreasing serum triglycerides and total cholesterol and inhibiting lipid accumulation in livers *in vivo*.<sup>3</sup>

### References

1. Tan, Z., Cheng, J., Liu, Q., *et al.* Neohesperidin suppresses osteoclast differentiation, bone resorption and ovariectomized-induced osteoporosis in mice. *Mol. Cell Endocrinol.* **439**, 369-378 (2017).
2. Wu, H., Liu, Y., Chen, X., *et al.* Neohesperidin exerts lipid-regulating effects *in vitro* and *in vivo* via fibroblast growth factor 21 and AMP-Activated protein kinase/sirtuin type 1/peroxisome proliferator-activated receptor gamma coactivator 1 $\alpha$  signaling axis. *Pharmacology* **100(3-4)**, 115-126 (2017).
3. Jia, S., Hu, Y., Zhang, W., *et al.* Hypoglycemic and hypolipidemic effects of neohesperidin derived from *Citrus aurantium* L. in diabetic KK-A $^y$  mice. *Food Funct.* **6(3)**, 878-886 (2015).

#### 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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