# **PRODUCT** INFORMATION



## Neohesperidin dihydrochalcone

Item No. 28510

CAS Registry No.: Formal Name:	$\begin{array}{l} 20702\text{-}77\text{-}6\\ 1\text{-}[4\text{-}[[2\text{-}O\text{-}(6\text{-}deoxy\text{-}\alpha\text{-}L\text{-}\\ mannopyranosyl]\text{-}\beta\text{-}D\text{-}glucopyranosyl]\\ oxy]\text{-}2\text{,}6\text{-}dihydroxyphenyl]\text{-}3\text{-}(3\text{-}hydroxy\text{-})\end{array}$	HO	OH O	
	4-methoxyphenyl)-1-propanone			Ĭ Ì
Synonym:	NHDC			
MF:	$C_{28}H_{36}O_{15}$		✓ OH	Y '0'
FW:	612.6	но, 🗸 🤞		о́н
Purity:	≥98%	$\sim$ $\sim$		
UV/Vis.:	λ <sub>may</sub> : 225, 284 nm			
Supplied as:	A solid	HO'		
Storage:	-20°C	A labeled and a labeled at the label		
Stability:	≥4 years			

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

#### Laboratory Procedures

Neohesperidin dihydrochalcone (NHDC) is supplied as a solid. A stock solution may be made by dissolving the NHDC in the solvent of choice, which should be purged with an inert gas. NHDC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of NHDC in ethanol and DMSO is approximately 25 mg/ml and approximately 50 mg/ml in DMF.

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 NHDC can be prepared by directly dissolving the solid in aqueous buffers. NHDC is slightly soluble in PBS, pH 7.2. We do not recommend storing the aqueous solution for more than one day.

#### Description

NHDC is a semisynthetic glycoside chalcone, an artificial sweetener, and a derivative of neohesperidin (Item No. 23028).<sup>1,2</sup> It scavenges 59.9, 66.7, 6.3, and 20% of 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805), ABTS (Item No. 27317), superoxide, and hydroxyl radicals, respectively, in cell-free assays when used at a concentration of 50  $\mu$ M.<sup>3</sup> NHDC (200 mg/kg per day) inhibits decreases in hepatic GSH levels and increases in serum aspartate aminotransferase (AST) and alanine transaminase (ALT) activity and hepatic levels of reactive oxygen species (ROS), thiobarbituric acid reactive substances (TBARS), NF-κB, IL-6, IL-1 $\beta$ , and TNF- $\alpha$  in a mouse model of acute liver injury induced by paraguat.<sup>2</sup>

#### References

- 1. Braune, A., Engst, W., and Blaut, M. Degradation of neohesperidin dihydrochalcone by human intestinal bacteria. J. Agric. Food Chem. 53(5), 1782-1790 (2005).
- 2. Shi, Q., Song, X., Fu, J., et al. Artificial sweetener neohesperidin dihydrochalcone showed antioxidative, anti-inflammatory and anti-apoptosis effects against paraquat-induced liver injury in mice. Int. Immunopharmacol. 29(2), 722-729 (2015).
- 3. Su, C., Xia, X., Shi, Q., et al. Neohesperidin dihydrochalcone versus CCl<sub>4</sub>-induced hepatic injury through different mechanisms: The implication of free radical scavenging and Nrf2 activation. J. Agric. Food Chem. 63(22), 5468-5475 (2015).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFFTY 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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