*Natural Products*

ChemFaces

# Notoginsenoside R1 Datasheet

4th Edition (Revised in July, 2016)

## [ Product Information ]

**Name:** Notoginsenoside R1

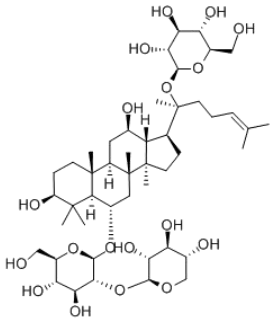
**Catalog No.:** CFN99999

**Cas No.:** 80418-24-2

**Purity:** >=98%

**M.F:** $C_{47}H_{80}O_{18}$

**M.W:** 933.13



**Physical Description:** White powder

**Synonyms:**beta-D-Glucopyranoside,(3beta,6alpha,12beta)-20-(beta-D-glucopyranosyloxy)-3,12-dihydroxydammar-24-en-6-yl-2-O-beta-D-xylopyranosyl-;(6beta,8xi,9xi,12alpha,13xi,14beta)-17-[(1S)-1-(beta-D-glucopyranosyloxy)-1,5-dimethylhex-4-en-1-yl]-3,12-dihydroxy-4,4,10,14-tetramethylgonan-6-yl-2-O-beta-D-xylopyranosyl-beta-D-glucopyranoside; Netoginsenoside.

## [ Intended Use ]

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

## [ Source ]

The roots of *Panax notoginseng (Burk.)F.H.Chen.*

## [ Biological Activity or Inhibitors]

Notoginsenoside R1(NR1) is the main ingredient with cardiovascular activity in Panax notoginseng, it inhibits TNF-alpha-induced ERK activation and subsequent fibronectin overexpression and migration in human arterial smooth muscle cells (HASMCs) by suppressing NADPH oxidase-mediated ROS generation and directly scavenging ROS. [1]

Notoginsenoside R1 may preferentially protect neurons from glutamate (Glu) excitotoxicity mediated by N-methyl-D-aspartate (NMDA) receptor composed of an NR1/NR2B subunit assembly in the brain.[2]

Notoginsenoside R1 can counteract endotoxin-induced activation of endothelial cells in vitro and endotoxin-induced lethality in mice in vivo.[3]

Notoginsenoside R1 has antioxidant, anti-inflammatory, antiapoptotic, and immune-stimulatory activities; it can attenuate renal ischemia-reperfusion (I/R) injury, treatment with NR1 improves renal function after I/R associated with a significant reduction in cell apoptosis and inflammatory responses, which may be related to p38 and nuclear factor kappaB inhibition. [4]

Notoginsenoside R1 attenuates amyloid-β-induced damage in neurons by inhibiting reactive oxygen species and modulating MAPK activation, it is a great potential agent for Alzheimer's disease and other Aβ pathology-related neuronal degenerative disease.[5]

## [ Solvent ]

Pyridine, Methanol, Ethanol, etc.

## [ HPLC Method ][6 ]

Mobile phase: Acetonitrile- H2O, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 203 nm.

## [ Storage ]

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

## [ References ]


[1] Zhang H S, Wang S Q. *Free Radical Biol. Med., 2006, 40(9):1664-74.*

[2]Bin Gu, Noritaka Nakamichi , Zhang W S, *et al. J.Neurosci. Res., 2009, 87(9):2145–56.*

[3] Zhang W J, Wojta J, Binder B R. *Arterioscl.Throm.Vas., 1997, 17(3):465-74.*

[4] Liu W J, Tang H T, Jia Y T, *et al. Shock, 2010, 34(34):314-20.*

[5] Ma B, Meng X, Wang J*, et al. Int.Immunopharmacol., 2014, 22(1):151-9.*

[6] Zhang Q H, Yan B, Jiang T. *Chinese Traditional Patent Medicine, 2006, 28(5):655-8.*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