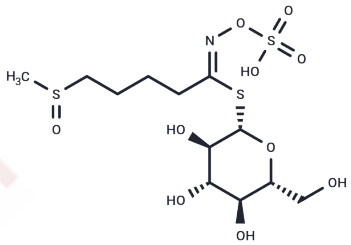
Data Sheet (Cat.No.TQ0212)

TargetMol

Glucoraphanin

Chemical Properties



CAS No. : 21414-41-5

Formula: C12H23NO10S3

Molecular Weight: 437.51

Storage: Store at low temperature,Store under nitrogen,Keep away from direct sunlight,Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Glucoraphanin, the precursor of the widely extolled chemopreventive agent sulforaphane found in broccoli, has antioxidant activity.
Targets(IC50)	Antioxidant,Reactive Oxygen Species,Endogenous Metabolite,ROS
In vivo	Glucoraphanin reduces weight gain, enhances energy expenditure, improves insulin sensitivity, and glucose tolerance in HFD-fed mice, but it does not exert these effects in Nrf2-/-. It blocks HFD-induced reduction of Ucp1 protein levels in white adipose depots of wild-type mice but not in Nrf2-/-, alleviates HFD-induced hepatic steatosis and oxidative stress, and suppresses HFD-induced proinflammatory activation of macrophages in the liver and adipose tissue [1]. Additionally, pellets containing 0.1% Glucoraphanin (GF) significantly attenuate decreased social avoidance time and sucrose preference in stressed mice [2].
Animal Research	Male C57BL/6JSlc mice are 7 weeks of age. The Nrf2 knockout (Nrf2?/?) mouse strain is used in the assay. After 1 week of acclimation, mice are fed normal chow (NC) (containing 2.2% dextrinized cornstarch, 10% kcal from fat), NC containing 0.3% glucoraphanin (NC-GR) (containing 2.2% extract powder), an HFD (containing 2.2% dextrinized cornstarch, 60% kcal from fat), or an HFD containing 0.3% glucoraphanin (HFD-GR) (containing 2.2% extract powder) for 14 weeks. Both the NC and the HFD containing cornstarch or glucoraphanin are prepared. All mice studied are maintained on a 12-h light/dark cycle at 24-26°C with free access to water and food [1].

Solubility Information

Solubility	H2O: 150 mg/mL (342.85 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2857 mL	11.4283 mL	22.8566 mL
5 mM	0.4571 mL	2.2857 mL	4.5713 mL
10 mM	0.2286 mL	1.1428 mL	2.2857 mL
50 mM	0.0457 mL	0.2286 mL	0.4571 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Nagata N, et al. Glucoraphanin Ameliorates Obesity and Insulin Resistance Through Adipose Tissue Browning and Reduction of Metabolic Endotoxemia in Mice. Diabetes. 2017 May;66(5):1222-1236.
Sun R, Huang H, Wang Z, et al.Computer-driven Evolution of Myrosinase from the Cabbage Aphid for Efficient Production of (R)-Sulforaphane.Journal of Agricultural and Food Chemistry.2024
Yao W, et al. Role of Keap1-Nrf2 signaling in depression and dietary intake of glucoraphanin confers stress resilience in mice. Sci Rep. 2016 Jul 29;6:30659.

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