

PRODUCT INFORMATION



Glucoraphanin (potassium salt)

Item No. 10009445

Formal Name: 1-thio-1-[5-(methylsulfinyl)-N-(sulfooxy)pentanimidate]-β-D-glucopyranose, potassium salt

Synonyms: 4-Methylsulfinylbutyl Glucosinolate, Sulforaphane Glucosinolate

MF: C₁₂H₂₂NO₁₀S₃ • XK

FW: 436.5

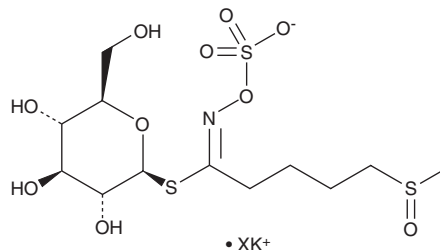
Purity: ≥95%

UV/Vis.: λ_{max}: 225 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

Glucoraphanin (potassium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the glucoraphanin (potassium salt) in the solvent of choice, which should be purged with an inert gas. Glucoraphanin (potassium salt) is soluble in the organic solvent DMSO at a concentration of approximately 1 mg/ml.

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 glucoraphanin (potassium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of glucoraphanin (potassium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Glucoraphanin is a glucosinolate that has been found in broccoli and has antioxidant activity.¹⁻³ It is converted by gut microbiota to the antioxidant L-sulforaphane (Item No. 14797).¹ Glucoraphanin (25 and 50 μM) reverses hydrogen peroxide-induced decreases in Nrf2-mediated, but not NF-κB-mediated, transcriptional activity in reporter assays using Caco-2 human intestinal epithelial cells.² It also restores epithelial integrity in a transepithelial electrical resistance (TEER) assay, but does not affect chemokine release, catalase activity, or chemokine (C-C motif) ligand 2 (CCL2) release, in Caco-2 cells. Glucoraphanin (30 μM) prevents dexamethasone-induced apoptosis and restores oxidative balance by reducing dexamethasone-induced increases in catalase activity, superoxide levels, and protein carbonylation in C2C12 mouse myotubes in an *in vitro* model of sarcopenia.³

References

1. Mazarakis, N., Snibson, K., Licciardi, P.V., *et al.* The potential use of L-sulforaphane for the treatment of chronic inflammatory diseases: A review of the clinical evidence. *Clin. Nutr.* **39**(3), 664-675 (2020).
2. Sonzogni, E., Martinelli, G., Fumagalli, M., *et al.* In vitro insights into the dietary role of glucoraphanin and its metabolite sulforaphane in celiac disease. *Nutrients* **16**(16), 2743 (2024).
3. Micheli, L., Mitidieri, E., Turnaturi, C., *et al.* Beneficial effect of H₂S-releasing molecules in an in vitro model of sarcopenia: Relevance of glucoraphanin. *Int. J. Mol. Sci.* **23**(11), 5955 (2022).

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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