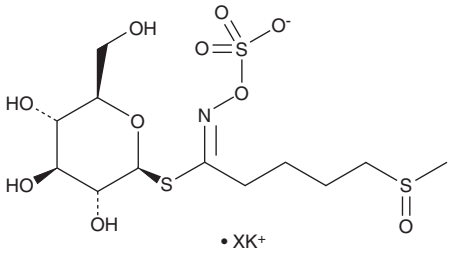
PRODUCT INFORMATION

Glucoraphanin (potassium salt)

Item No. 10009445

Formal Name:	1-thio-1-[5-(methylsulfinyl)-N-(sulfooxy)pentanimidate]-β-D-glucopyranose, potassium salt
MF:	$C_{12}H_{22}NO_{10}S_3 \bullet XK$
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. Glucoraphanin (potassium salt) is soluble in the organic solvent DMSO, which should be purged with an inert gas, 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 natural glycoinsolate found in cruciferous vegetables, including broccoli.[1] It is converted to the isothiocyanate sulforaphane by the enzyme myrosinase.[1] Sulforaphane has powerful antioxidant, anti-inflammatory, and anti-carcinogenic effects.[1,2] It acts by activating nuclear factor erythroid 2-related factor 2 (Nrf2), which induces the expression of phase II detoxification enzymes.[3,4]

References

1. James, D., Devaraj, S., Bellur, P., *et al.* Novel concepts of broccoli sulforaphanes and disease: Induction of phase II antioxidant and detoxification enzymes by enhanced-glucoraphanin broccoli. *Nutr. Rev.* **70(11)**, 654-665 (2012).
2. Liang, H. and Yuan, Q. Natural sulforaphane as a functional chemopreventive agent: Including a review of isolation, purification and analysis methods. *Crit. Rev. Biotechnol.* **32**, 218-234 (2012).
3. La Marca, M., Beffy, P., Croce, C.D., *et al.* Structural influence of isothiocyanates on expression of cytochrome P450, phase II enzymes, and activation of Nrf2 in primary rat hepatocytes. *Food Chem. Toxicol.* **50(8)**, 2822-2830 (2012).
4. Dinkova-Kostova, A.T., Holtzclaw, W.D., Cole, R.N., *et al.* Direct evidence that sulfhydryl groups of Keap1 are the sensors regulating induction of phase 2 enzymes that protect against carcinogens and oxidants. *Proc. Natl. Acad. Sci. USA* **99(18)**, 11908-11913 (2012).

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.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 09/29/2022

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM