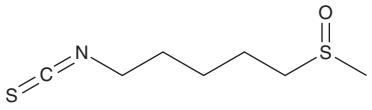
PRODUCT INFORMATION

Alyssin

Item No. 31513

CAS Registry No.:	646-23-1
Formal Name:	1-isothiocyanato-5-(methylsulfinyl)-pentane
Synonyms:	5-Methylsulfinylpentyl isothiocyanate, 5-Methylsulfinylpentyl ITC
MF:	$C_7H_{13}NOS_2$
FW:	191.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 245 nm
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Synthetic



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

Laboratory Procedures

Alyssin is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as chloroform and DMSO purged with an inert gas can be used.

Description

Alyssin is an isothiocyanate that has been found in *W. japonica* and has diverse biological activities, including antibacterial, CYP inhibitory, and antiproliferative properties.[1-3] It is active against the bacteria *B. subtilis*, methicillin-sensitive *S. aureus*, methicillin-resistant *S. aureus* (MRSA), and *E. coli*[1] Alyssin (0.5-2.5 µM) directly inhibits activity of the cytochrome P450 (CYP) isoforms CYP1A1 and CYP1A2 induced by the polycyclic aromatic hydrocarbons (PAHs) anthracene and dibenzo[a,h]anthracene in MCF-7 breast cancer cells.[2] It inhibits proliferation of HCT116 colon cancer cells (IC_{50} = <4 µM).[3] Alyssin also inhibits platelet aggregation induced by ADP or arachidonic acid (IC_{50}s = 168 and 20 µM, respectively).[4]

References

1. Masuda, H., Harada, Y., Kishimoto, N., *et al.* Antimicrobial Activities of Isothiocyanates. *Aroma Active Compounds in Foods*, *American Chemical Society* (2001).
2. Skupinska, K., Misiewicz-Krzeminska, I., Lubelska, K., *et al.* The effect of isothiocyanates on CYP1A1 and CYP1A2 activities induced by polycyclic aromatic hydrocarbons in Mcf7 cells. *Toxicol. In Vitro* **23(5)**, 763-771 (2009).
3. Kim, M.J., Kim, S.H., and Lim, S.-J. Comparison of the apoptosis-inducing capability of sulforaphane analogues in human colon cancer cells. *Anticancer Res.* **30(9)**, 3611-3619 (2010).
4. Morimitsu, Y., Hayashi, K., Nakagawa, Y., *et al.* Antiplatelet and anticancer isothiocyanates in Japanese domestic horseradish, *Wasabi*. *Mech. Ageing Dev.* **116(2-3)**, 125-134 (2000).

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