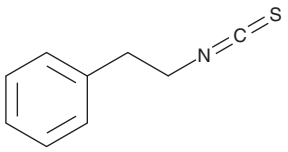
PRODUCT INFORMATION

Phenethyl isothiocyanate

Item No. 27804

CAS Registry No.:	2257-09-2
Formal Name:	(2-isothiocyanatoethyl)-benzene
Synonyms:	NSC 87868, PEITC
MF:	C_9H_9NS
FW:	163.2
Purity:	≥95%
Supplied as:	A liquid
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

Phenethyl isothiocyanate (PEITC) is supplied as a liquid. A stock solution may be made by dissolving the PEITC in the solvent of choice, which should be purged with an inert gas. PEITC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of PEITC in these solvents is approximately 30 mg/ml.

Description

PEITC is an isothiocyanate that has been found in cruciferous vegetables and has anticancer activity.[1] It inhibits the activity of glutathione peroxidase (GPX), reduces cellular glutathione (GSH) levels, and induces the accumulation of reactive oxygen species (ROS) in T72 ovarian epithelial cells expressing H-Ras^{V12} when used at a concentration of 10 µM.[2] PEITC (10 µM) induces cell cycle arrest at the G_2/M phase and apoptosis in PL45, MIA PaCa-2, and BxPC-3 pancreatic cancer cells.[3] It decreases the number of tumor cells expressing Ki-67 or proliferating cell nuclear antigen (PCNA), markers of cell proliferation, and reduces tumor growth in a MIA PaCa-2 mouse xenograft model.

References

1. Gupta, P., Wright, S.E., Kim, S.-H., *et al*. Phenethyl isothiocyanate: A comprehensive review of anti-cancer mechanisms. *Biochim. Biophys. Acta* **1846(2)**, 405-424 (2014).
2. Trachootham, D., Zhou, Y., Zhang, H., *et al*. Selective killing of oncogenically transformed cells through a ROS-mediated mechanism by beta-phenylethyl isothiocyanate. *Cancer Cell* **10(3)**, 241-252 (2006).
3. Stan, S.D., Singh, S.V., Whitcomb, D.C., *et al*. Phenethyl isothiocyanate inhibits proliferation and induces apoptosis in pancreatic cancer cells *in vitro* and in a MIAPaca2 xenograft animal model. *Nutr. Cancer* **66(4)**, 747-755 (2014).

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