Sulforaphane
Item No. 10496

CAS Registry No.: 4478-93-7
Formal Name: 1-isothiocyanato-4-(methylsulfinyl)-butane
Synonym: SFN
MF: C_{6}H_{11}NOS_{2}
FW: 177.3
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol
UV/Vis: λ_{max}: 245 nm

Laboratory Procedures
For long term storage, we suggest that sulforaphane (SFN) be stored as supplied at -20°C. It should be stable for at least one year.

SFN 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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of SFN in these solvents is approximately 16 and 3 mg/ml, respectively.

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. If an organic solvent-free solution of SFN is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of SFN in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Nrf2 activation of the antioxidant response element (ARE) is central to cytoprotective gene expression against oxidative and/or electrophilic stress.1 Unless activated by inflammatory, environmental, or oxidative stressors, Nrf2 is sequestered in the cytoplasm by its repressor, Keap1.2 Because of its protective capabilities, small molecules that activate Nrf2 signaling are being examined as potential anti-cancer or anti-inflammatory agents.3 SFN is an isothiocyanate derived from cruciferous vegetables, including broccoli, that potently induces chemopreventative enzymes via Keap1-Nrf2 signaling and ARE-driven gene expression.4 At 15 μM, SFN inhibits class I and II HDAC activity and suppresses tumor growth by inducing cell cycle arrest and apoptosis selectively in various cancerous prostate epithelial cells without affecting normal cells.5

References

Related Products
For a list of related products please visit: www.caymanchem.com/catalog/10496

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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