

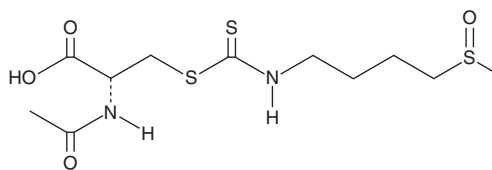
# PRODUCT INFORMATION



## DL-Sulforaphane N-acetyl-L-cysteine

Item No. 16098

**CAS Registry No.:** 334829-66-2  
**Formal Name:** N-acetyl-S-[[[4-(methylsulfinyl)butyl]amino]thiomethyl]-L-cysteine  
**Synonym:** SFN-NAC  
**MF:** C<sub>11</sub>H<sub>20</sub>N<sub>2</sub>O<sub>4</sub>S<sub>3</sub>  
**FW:** 340.5  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 250, 275 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

DL-Sulforaphane N-acetyl-L-cysteine (SFN-NAC) is supplied as a crystalline solid. A stock solution may be made by dissolving the SFN-NAC in the solvent of choice, which should be purged with an inert gas. SFN-NAC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of SFN-NAC in ethanol is approximately 5 mg/ml and approximately 10 mg/ml in DMSO and DMF.

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

### Description

Nrf2 activation of the antioxidant response element (ARE) is central to cytoprotective gene expression against oxidative and/or electrophilic stress.<sup>1</sup> Unless activated by inflammatory, environmental, or oxidative stressors, Nrf2 is sequestered in the cytoplasm by its repressor, Keap1.<sup>2</sup> Because of its protective capabilities, small molecules that activate Nrf2 signaling are being examined as potential anti-cancer or anti-inflammatory agents.<sup>3</sup> DL-Sulforaphane N-acetyl-L-cysteine (SFN-NAC) is a major metabolite of SFN (Item No. 10496), a powerful inducer of chemopreventative enzymes via Keap1-Nrf2 signaling and ARE-driven gene expression.<sup>4,5</sup> At 75 μM, SFN-NAC has been shown to increase ARE expression in HepG2-C8 cells.<sup>6</sup> Its reported potency on ARE-related gene expression is roughly 8-fold less than SFN.<sup>6</sup>

### References

1. Wang, R., Kern, J.T., Goodfriend, T.L., et al. *Prostaglandins Leukot. Essent. Fatty Acids* **81(1)**, 53-59 (2009).
2. Gao, L., Wang, J., Sekhar, K.R., et al. *J. Biol. Chem.* **282(4)**, 2529-2537 (2007).
3. Taguchi, K., Motohashi, H., and Yamamoto, M. *Genes Cells* **16(2)**, 123-140 (2011).
4. Dinkova-Kostova, A.T., Holtzclaw, W.D., Cole, R.N., et al. *Proc. Natl. Acad. Sci. USA* **99(18)**, 11908-11913 (2012).
5. Wang, H., Khor, T.O., Yang, Q., et al. *Mol. Pharmacol.* **9(10)**, 2819-2827 (2012).
6. Kim, B.R., Hu, R., Keum, Y.S., et al. *Cancer Res.* **63(21)**, 7520-7525 (2003).

#### 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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