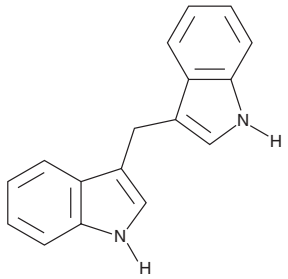
PRODUCT INFORMATION

3,3'-Diindolylmethane

Item No. 15927

CAS Registry No.: 1968-05-4
Formal Name: 3,3'-methylenebis-1H-indole
Synonym: DIM
MF: $C_{17}H_{14}N_2$
FW: 246.3
Purity: ≥98%
UV/Vis.: λ_{max}: 225, 283 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

3,3'-Diindolylmethane is supplied as a crystalline solid. A stock solution may be made by dissolving the 3,3'-diindolylmethane in the solvent of choice, which should be purged with an inert gas. 3,3'-Diindolylmethane is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 3,3'-diindolylmethane in ethanol is approximately 15 mg/ml and approximately 30 mg/ml in DMSO and DMF.

3,3'-Diindolylmethane is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3,3'-diindolylmethane should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 3,3'-Diindolylmethane has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

3,3'-Diindolylmethane (DIM) is a bioactive metabolite of indole-3-carbinol, a phytochemical produced by the breakdown of the glucosinolate glucobrassicin found in cruciferous vegetables. At 10-30 µM, it demonstrates anticancer and chemopreventative effects involving Nrf2 induction of Phase 2 enzymes, promotion of apoptosis, induction of cell cycle arrest, inhibition of cell proliferation, and inhibition of histone deacetylases and DNA methylation activities.[1-3] Furthermore, at 0.3 µM DIM was shown to act as a potent radioprotector and mitigator of the effects of ionizing radiation exposure by stimulating an ATM-driven DNA damage-like response and NF-κB survival signaling in cultured epithelial cells.[4]

References

1. Wong, C.P., Hsu, A., Buchanan, A., *et al.* Effects of sulforaphane and 3,3'-diindolylmethane on genome-wide promoter methylation in normal prostate epithelial cells and prostate cancer cells. *PLoS One* **9(1)**, (2014).
2. Wu, T.Y., Khor, T.O., Su, Z.Y., *et al.* Epigenetic modifications of Nrf2 by 3,3'-diindolylmethane *in vitro* in TRAMP C1 cell line and *in vivo* TRAMP prostate tumors. *AAPS J.* **15(3)**, 864-874 (2013).
3. Xu, Y., Zhang, J., Shi, W., *et al.* Anticancer effects of 3,3'-diindolylmethane are associated with G1 arrest and mitochondria-dependent apoptosis in human nasopharyngeal carcinoma cells. *Oncol. Lett.* **5(2)**, 655-662 (2013).
4. Fan, S., Meng, Q., Xu, J., *et al.* DIM (3,3'-diindolylmethane) confers protection against ionizing radiation by a unique mechanism. *Proc. Natl. Acad. Sci. USA* **110(46)**, 18650-18655 (2013).

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