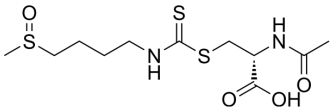
DL-Sulforaphane N-acetyl-L-cysteine

Cat. No.:	HY-132242
CAS No.:	334829-66-2
Molecular Formula:	$C_{11}H_{20}N_2O_4S_3$
Molecular Weight:	340.48
Target:	HDAC; Apoptosis; Drug Metabolite
Pathway:	Cell Cycle/DNA Damage; Epigenetics; Apoptosis; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

DL-Sulforaphane N-acetyl-L-cysteine (SFN-NAC) is an orally active HDAC inhibitor and metabolite of sulforaphane (HY-13755) with longer half-life and better blood-brain barrier permeability. DL-Sulforaphane N-acetyl-L-cysteine activates autophagy-mediated downregulation of α-tubulin expression through the ERK pathway and can be used in cancer research[1][2].

In Vitro

SFN-NAC (24 h) decreases cell viability, with IC_{50} values of 60.08 μM for HA, 35.20 μM for U87MG, 39.11 μM for U373MG, and 36.20 μM for the U87/TR cells[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cycle Analysis[1]

Cell Line:	U87MG and U373MG cells
Concentration:	0, 30 μM
Incubation Time:	24 h
Result:	Induced cell-cycle arrest in the G2/M phase and triggered apoptosis at the same time.

Western Blot Analysis[1]

Cell Line:	U87MG and U373MG cells
Concentration:	0, 10, 20, 30, 40, 50μM
Incubation Time:	24 h
Result:	Activated ERK1/2 (Thr202/Tyr204), downregulated α-tubulin, and induced autophagy in a dose-dependent manner.

Cell Viability Assay[1]

Cell Line:	HA, U87MG, U373MG and U87/TR cells
Concentration:	0, 10, 20, 30, 40, 50, 60, 70, 80, 90 μM for HA and U87MG cells or 0, 10, 20, 30, 40, 50, 60 μM for U373MG and U87/TR cells
Incubation Time:	24 h

Result:	Decreased the cell viability of these cell lines in a dose-dependent manner.

In Vivo

SFN-NAC (10 μmol; 6 h; Oral gavage; single dose) significantly inhibits HDAC activity in mouse colon mucosa[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	mice[2]
Dosage:	10 μmol
Administration:	Oral gavage; 6 h; single dose
Result:	Significantly inhibited HDAC activity in mouse colon mucosa.

REFERENCES

[1]. Liu HJ, et al. Sulforaphane-N-Acetyl-Cysteine Induces Autophagy Through Activation of ERK1/2 in U87MG and U373MG Cells. Cell Physiol Biochem. 2018;51(2):528-542.

[2]. Dashwood R H, et al. Dietary histone deacetylase inhibitors: from cells to mice to man[C]//Seminars in cancer biology. Academic Press, 2007, 17(5): 363-369.

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