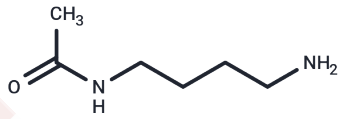
Data Sheet (Cat.No.T77257)

TargetMol

N-Acetylputrescine

Chemical Properties



CAS No. : 5699-41-2

Formula: C6H14N2O

Molecular Weight: 130.19

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	N-Acetylputrescine is an acetylated metabolite of the polyamine putrescine. N-Acetylputrescine participates in polyamine metabolism and regulatory processes within cells and reflects the dynamic balance between polyamine synthesis and degradation. N-Acetylputrescine exhibits activity toward the peroxisomal N(1)-acetyl-spermine/spermidine oxidase (PAOX) (Ki = 800 μM) and is commonly used as a metabolic biomarker to study polyamine metabolic changes in cellular proliferation, gut microbiota metabolism, and related disease states.
Targets(IC50)	Endogenous Metabolite
In vitro	N-Acetylputrescine (radioactive label; 72 h) is synthesized by putrescine in human lymphocyte culture, which can be released into the culture medium. Its production is related to the cell proliferation state and may participate in the regulation of polyamine metabolism [2].
In vivo	The concentration of N-Acetylputrescine in rat lung squamous cell carcinoma (SCCL) model induced by 3-methylcholanthrene increased significantly with the progress of cancer, and after being treated with anticancer agents, the concentration of N-Acetylputrescine decreased, which can be used as a potential biomarker for early diagnosis and evaluation of SCC [3].

Solubility Information

Solubility	H2O: 100.00 mg/mL (768.11 mM),Sonication is recommended. DMSO: 100.00 mg/mL (768.11 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.6811 mL	38.4054 mL	76.8108 mL
5 mM	1.5362 mL	7.6811 mL	15.3622 mL
10 mM	0.7681 mL	3.8405 mL	7.6811 mL
50 mM	0.1536 mL	0.7681 mL	1.5362 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Pfanzagl B, et al. N-acetylputrescine as a characteristic constituent of cyanelle peptidoglycan in glaucocystophyte algae. J Bacteriol. 1996 Dec;178(23):6994-7.
Menashe M, et al. Formulation of N-acetylputrescine and N1-acetylspermidine in cultured human lymphocytes. Biochem J. 1980 Apr 15;188(1):263-7.
Liu R, et al. Plasma N-acetylputrescine, cadaverine and 1,3-diaminopropane: potential biomarkers of lung cancer used to evaluate the efficacy of anticancer drugs. Oncotarget. 2017 Jul 17;8(51):88575-88585.
Peng K W, et al. Identification and Validation of N-Acetylputrescine in Combination With Non-Canonical Clinical Features As a Parkinson's Disease Biomarker Panel[J]. bioRxiv, 2021: 2021.07. 23.453542.
Dredar SA, et al. Design and synthesis of inhibitors of N8-acetylspermidine deacetylase. J Med Chem. 1989 May;32 (5):984-9.