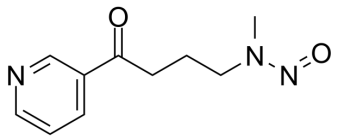
NNK

Cat. No.:	HY-126477
CAS No.:	64091-91-4
Molecular Formula:	$C_{10}H_{13}N_3O_2$
Molecular Weight:	207
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 62.5 mg/mL (301.93 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.8309 mL	24.1546 mL	48.3092 mL
	5 mM	0.9662 mL	4.8309 mL	9.6618 mL
	10 mM	0.4831 mL	2.4155 mL	4.8309 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 1% CMC-Na/saline water
   Solubility: 3.33 mg/mL (16.09 mM); Clear solution; Need ultrasonic and warming and heat to 50°C

BIOLOGICAL ACTIVITY

Description

NNK is a nicotine-nitrosated derivative. NNK simultaneously stimulates Bcl2 phosphorylation exclusively at Ser^{70} and c-Myc at Thr^{58} and Ser^{62} through activation of both ERK1/2 and PKCα[1]. NNK induces survival and proliferation of human lung cancer cells. NNK can be used for lung cancer mice model structure[2].

IC_{50} & Target

ERK1, ERK2, PKCα, Bcl2, c-Myc [1]

In Vitro

NNK (100 pM; 0-60 min) stimulates activation of PKCα and MAPKs ERK1/2 that directly induce c-Myc phosphorylation[1].
NNK (100 pM; 96 hours) enhances proliferation of cells expressing WT but not AA c-Myc mutant[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis

Cell Line:	NCI-H82 cells[1]
Concentration:	100 pM
Incubation Time:	0-60 min
Result:	Stimulated activation of PKCα and MAPKs ERK1/2 that directly induced c-Myc phosphorylation.

Apoptosis Analysis

Cell Line:	H1299 lung cancer cells[1]
Concentration:	100 pM
Incubation Time:	96 hours
Result:	Enhanced proliferation of cells expressing WT but not T58A/S62A c-Myc mutant.

REFERENCES

[1]. Jin Z, et al. Tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone promotes functional cooperation of Bcl2 and c-Myc through phosphorylation in regulating cell survival and proliferation. J Biol Chem. 2004;279(38):40209-40219.

[2]. Castonguay A, et al. Lung tumorigenicity of NNK given orally to A/J mice: its application to chemopreventive efficacy studies. Exp Lung Res. 1991;17(2):485-499.

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