Ro 90-7501

Cat. No.: HY-103241

CAS No.: 293762-45-5

Molecular Formula: $C_{20}H_{16}N_6$

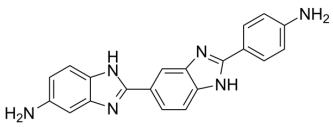
Molecular Weight: 340.38

Target: Amyloid-β; ATM/ATR; Phosphatase; Apoptosis

Pathway: Neuronal Signaling; Cell Cycle/DNA Damage; PI3K/Akt/mTOR; Metabolic Enzyme/Protease; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 41.67 mg/mL (122.42 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9379 mL	14.6895 mL	29.3789 mL
5 mM	0.5876 mL	2.9379 mL	5.8758 mL
10 mM	0.2938 mL	1.4689 mL	2.9379 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.08 mg/mL (6.11 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (6.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ro 90-7501 is an amyloid β_{42} ($A\beta_{42}$) fibril assembly inhibitor that reduces $A\beta_{42}$-induced cytotoxicity (EC_{50} of 2 μM). Ro 90-7501 inhibits ATM phosphorylation and DNA repair. RO 90-7501 selectively enhances toll-like receptor 3 (TLR3) and RIG-I-like receptor (RLR) ligand-induced IFN-β gene expression and antiviral response[2]. Ro 90-7501 also inhibits protein phosphatase 5 (PP5) in a TPR-dependent manner[3]. Ro 90-7501 has significant radiosensitizing effects on cervical cancer cells[4].

IC_{50} & Target				
	Amyloid β42	ATM	Protein phosphatase 5	Apoptosis

In Vitro

Ro 90-7501 significantly enhances radiosensitivity compared with control HeLa and ME-180 cells. Ro 90-7501 significantly increases apoptosis and impaired cell cycle after irradiation. Ro 90-7501 suppresses the phosphorylation of ATM and its

	downstream proteins, such as H2AX, Chk1, and Chk2, after irradiation[1]. RO 90-7501, itself affects neither IFN-β nor NFκB promoter activity, but significantly enhances poly I:C-induced IFN-β promoter activation and inhibits the activation of NFκB in a dose-dependent manner. Treatment of cells with RO 90-7501 significantly enhances the antiviral activity of poly I:C[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Ro 90-7501 (5 μg/g; intraperitoneal injection; daily; for 21 days; female BALB/c nude mice) treatment significantly delays tumor growth and significantly decreases tumor volume[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female BALB/c nude mice (8-week-old) with HeLa cells under irradiation[1]
Dosage:	5 μg/g
Administration:	Intraperitoneal injection; daily; for 21 days
Result:	Tumor growth was significantly delayed in the combination group. Tumor volume was also significantly decreased in the irradiation group.

CUSTOMER VALIDATION

- Int J Biochem Cell Biol. 2021, 106036.

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REFERENCES

[1]. Tamari K, et al. Ro 90-7501 Is a Novel Radiosensitizer for Cervical Cancer Cells that Inhibits ATM Phosphorylation. Anticancer Res. 2019 Sep;39(9):4805-4810.

[2]. Bohrmann B, et al. Self-assembly of beta-amyloid 42 is retarded by small molecular ligands at the stage of structural intermediates. J Struct Biol. 2000 Jun;130(2-3):232-46.

[3]. Hong TJ, et al. Ro 90-7501 inhibits PP5 through a novel, TPR-dependent mechanism. Biochem Biophys Res Commun. 2017 Jan 8;482(2):215-220.

[4]. Guo F, et al. RO 90-7501 enhances TLR3 and RLR agonist induced antiviral response. PLoS One. 2012;7(10):e42583.

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