# MN58b

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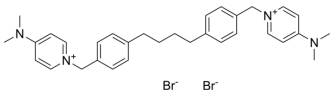
| **Cat. No.:** | HY-108431 |
| **CAS No.:** | 203192-01-2 |
| **Molecular Formula:** | $C_{32}H_{40}Br_2N_4$ |
| **Molecular Weight:** | 640.49 |
| **Target:** | Apoptosis |
| **Pathway:** | Apoptosis |
| **Storage:** | -20°C, sealed storage, away from moisture<br>* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture) |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 14.71 mg/mL (22.97 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.5613 mL | 7.8065 mL | 15.6130 mL |
| | 5 mM | 0.3123 mL | 1.5613 mL | 3.1226 mL |
| | 10 mM | 0.1561 mL | 0.7807 mL | 1.5613 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: ≥ 1.47 mg/mL (2.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.47 mg/mL (2.30 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

MN58b is a selective choline kinase α (CHKα) inhibitor, and results in inhibition of phosphocholine synthesis. MN58b reduces cell growth through the induction of apoptosis, and also has antitumoral activity[1][2].

**$IC_{50}$ & Target**

Choline kinase α (CHKα)[1]

**In Vitro**

The $IC_{50}$s of MN58b for parental and Gemcitabine-resistant Suit2 007 cells are 3.14 μM and 0.77 μM, respectively[1].
?MN58b (1-5 μM; 72 hours; SK-PC-1, Suit2 008, IMIM-PC2, and RWP-1 cells) has a marked effect on colony formation at 1 μM, and growth is completely abolished at 5 μM in all the cell lines[1].
?MN58b ((1-10 μM; 24-48 hours; SK-PC-1, Suit2 008, IMIM-PC2, and RWP-1 cells) induces apoptosis and this response correlates with CHKα expression[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

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| Cell Line: | SK-PC-1, Suit2 008, IMIM-PC2, and RWP-1 cells |
| Concentration: | 1 μM, 5 μM |
| Incubation Time: | 72 hours |
| Result: | Inhibited cells growth. |

Apoptosis Analysis[1]

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| Cell Line: | SK-PC-1, Suit2 008, IMIM-PC2, and RWP-1 cells |
| Concentration: | 1 μM, 2 μM, 5 μM, 10 μM |
| Incubation Time: | 24 and 48 hours |
| Result: | Induced cell apoptosis. |

**In Vivo**

MN58b (4 mg/kg; intraperitoneal injection; once a day; for 5 days; MF-1 nude mice) treatment significantly decreases phosphomonoesters in both HT29 and MDA-MB-231 xenografts. Phosphocholine levels are found to correlate with choline kinase activities[2].

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

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| Animal Model: | MF-1 nude mice with HT29 or MDA-MB-231 cells[2] |
| Dosage: | 4 mg/kg |
| Administration: | Intraperitoneal injection; once a day; for 5 days |
| Result: | Phosphomonoesters decreased significantly. |

## REFERENCES


[1]. Mazarico JM, et al. Choline Kinase Alpha (CHKα) as a Therapeutic Target in Pancreatic Ductal Adenocarcinoma: Expression, Predictive Value, and Sensitivity to Inhibitors. Mol Cancer Ther. 2016 Feb;15(2):323-33.

[2]. Al-Saffar NM, et al. Noninvasive magnetic resonance spectroscopic pharmacodynamic markers of the choline kinase inhibitor MN58b in human carcinoma models. Cancer Res. 2006 Jan 1;66(1):427-34.





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