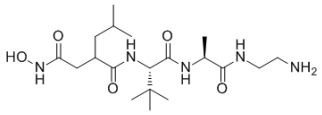
TAPI-2

Cat. No.:	HY-100211
CAS No.:	187034-31-7
Molecular Formula:	$C_{19}H_{37}N_5O_5$
Molecular Weight:	415.53
Target:	MMP
Pathway:	Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



Solvent & Solubility

In Vitro

DMSO : ≥ 22 mg/mL (52.94 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4066 mL	12.0328 mL	24.0657 mL
	5 mM	0.4813 mL	2.4066 mL	4.8131 mL
	10 mM	0.2407 mL	1.2033 mL	2.4066 mL

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

BIOLOGICAL ACTIVITY

Description

TAPI-2 is a broad-spectrum inhibitor of matrix metalloprotease (**MMP**), tumour necrosis factorα-converting enzyme (**TACE**) and a disintegrin and metalloproteinase (**ADAM**), with an **IC_{50}** of 20±10 μM for MMP.

IC_{50} & Target

IC50: 20±10 μM (MMP)[1]Ki: 1.5±0.27 nM (MMPs)[1]

In Vitro

The hydroxamate-based metalloprotease inhibitor TAPI-2 bounds to hmeprin with inhibition constants IC_{50} 20±10 μM for hmeprin β subunit and 1.5±0.27 nM for hmeprin α subunit. Generally, hmeprin α is inhibited more strongly than the β subunit[1]. Without affecting ADAM17 expression, TAPI-2 dramatically decreases the protein levels of NICD and its downstream target HES-1 in both HCP-1 and HT29 cells. Moreover, treating cells with TAPI-2 significantly decreases the CSC phenotype by -50% in both CRC cell lines. The dose-dependent effects of TAPI-2 on the sphere formation and protein levels of NICD and HES-1 confirm that the concentration used (20 μM) is within the effective dose range of TAPI-2 (5–40 μM)[2].

PROTOCOL

Kinase Assay [1]	Meprin activities are determined using N-benzoyl-L-tyrosyl p-aminobenzoic acid as substrate. The substrate concentration is 40 mM, and the enzyme concentration is always at least 10 times below K_i. Inhibitors are employed in a concentration range from 5 pM to 5 mM, depending on their inhibitory effect. Each inhibitor is tested over a concentration range covering at least ten different concentrations from $K_i/5$ to $5\times K_i$. All reactions are carried out at 37°C in 50 mM Tris/HCl, pH 7.5, and 0.5 mM $MgCl_2$[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Assay [2]	TAPI-2 is dissolved in DMSO and diluted with appropriate medium before use. All experiments are performed using 20 μM TAPI-2. Cells are cultured with or without TAPI-2 for 48 hours and then seeded at 3,000 cells per well in 96-well plates. After pretreatment, increasing doses of 5-fluorouracil (5-FU) that are relevant to the recommended clinical dose (up to 2 μg/mL) are added, with or without TAPI-2, for 72 hours. Cell viability is assessed by adding MTT substrate (0.25% in phosphate-buffered saline [PBS]) in growth medium (1:5 dilution) to cells for 1 hour at 37°C. The cells are ished with PBS, and 100 μL of dimethyl sulfoxideis added. Optical density is measured at 570 nM, and relative MTT is presented as a percentage of control[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- **J Cell Biochem**. 2018 Mar;119(3):2911-2922.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Kruse MN, et al. Human meprin alpha and beta homo-oligomers: cleavage of basement membrane proteins and sensitivity to metalloprotease inhibitors. Biochem J. 2004 Mar 1;378(Pt 2):383-9.

[2]. Wang R, et al. A Disintegrin and Metalloproteinase Domain 17 Regulates Colorectal Cancer Stem Cells and Chemosensitivity Via Notch1 Signaling. Stem Cells Transl Med. 2016 Mar;5(3):331-8.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA