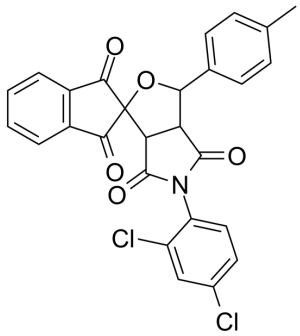
ML-T7

Cat. No.:	HY-163028
CAS No.:	459789-75-4
Molecular Formula:	$C_{27}H_{17}Cl_2NO_5$
Molecular Weight:	506.33
Target:	Tim3
Pathway:	Immunology/Inflammation
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 : 69.5 mg/mL (137.26 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9750 mL	9.8750 mL	19.7500 mL
	5 mM	0.3950 mL	1.9750 mL	3.9500 mL
	10 mM	0.1975 mL	0.9875 mL	1.9750 mL

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

BIOLOGICAL ACTIVITY

Description

ML-T7 is a potent Tim-3 inhibitor. ML-T7 blocks Tim-3 interactions with PtdSer and CEACAM1.ML-T7 not only enhances the antitumor activity of adoptive transfer therapy with cytotoxic T lymphocytes (CTLs) and CAR T cells but also increases the effector function of T cell. ML-T7 promotes NK cells' killing activity against tumor cells and DC antigen-presenting capacity. ML-T7 directly exerts antitumor efficacy in preclinical tumor models either alone or in combination with Nivolumab (HY-P9903A). ML-T7 can be used for tumor immunotherapy research[1].

In Vitro

ML-T7(10 μM, 0-6 days) enhances TCR/STAT5 signaling and promotes $CD8^+$ cell antitumor activity through Tim-3[1].

ML-T7(10 μM, 24 h) promotes DC maturation and function through Tim-3 and Tim-4, enhances DC antigen-presenting ability [1].

ML-T7(10 μM, 24 h) enhances CTL activation and cytokine production, decreases apoptosis of CTLs[1].

ML-T7(10 μM, 48 h) significantly enhances the production of IFN-γ, TNF-α, CD107a, and granzyme B in human NK cell line NK92 cells[1].

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

Western Blot Analysis[1]

Cell Line:	$CD8^+$ cell
Concentration:	10 μM
Incubation Time:	0-6 days
Result:	Increased the phosphorylation of phospholipase C–γ1(PLC-γ1), ZAP70, LCK, ERK1/2, and STAT5 upon anti-CD3/CD28 stimulation.

Cell Invasion Assay[1]

Cell Line:	Bone Marrow Cells
Concentration:	10 μM
Incubation Time:	24 h
Result:	Increased the expression of DC maturation markers.

In Vivo

ML-T7 (10-50 mg/kg; Intraperitoneal injection; every 2 days, 10 times) inhibits the growth of tumor and prolongs survival of HCC mice, without adverse effects on mice body weight[1].
ML-T7 (20 mg/kg; Intraperitoneal injection; every 2 days, 10 times) synergizes with Nivolumab (HY-P9903A) to improve the antitumor efficacy of Nivolumab (HY-P9903A) antibodies, and effectively improves HCC mice survival[1].
ML-T7 (50 mg/kg, Intraperitoneal injection; every 2 days for 3 weeks)shows a good safety profile in mice[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	10-week-old mice with spontaneous orthotopic HCC[1]
Dosage:	10-50 mg/kg
Administration:	Intraperitoneal injection (i.p.), every 2 days, 10 times
Result:	Increased $CD8^+$ T cells in both tumor and spleen. Inhibited T cell exhaustion. Promoted the function of CTLs, NK cells, and DCs.

Animal Model:	10-week-old mice with orthotopic Akt/c-Myc HCC[1]
Dosage:	20 mg/kg
Administration:	Intraperitoneal injection (i.p.), every 2 days, 10 times
Result:	Indicated stronger antituomr activity when treated with ML-T7 and Nivolumab (HY-P9903A).Rejuvenated NK cells by the combination therapy.Inhibited the accumulation of MDSCs and Tregs.

REFERENCES

[1]. Ma S, et al. Identification of a small-molecule Tim-3 inhibitor to potentiate T cell-mediated antitumor immunotherapy in preclinical mouse models. Sci Transl Med. 2023 Nov 15;15(722):eadg6752.

Caution: Product has not been fully validated for medical applications. For research use only.

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