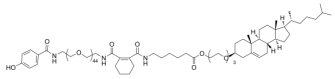
Chol-CTPP

Cat. No.:	HY-144825
Molecular Formula:	$C_{144}H_{263}N_3O_{53}$
Molecular Weight:	2884.62
Target:	Apoptosis; Reactive Oxygen Species
Pathway:	Apoptosis; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Chol-CTPP is a ligand with dual targeting effect on blood-brain barrier (BBB) and glioma cells. Lip-CTPP can be gained by Chol-CTPP and another mitochondria targeting ligand (Chol-TPP). Lip-CTPP is a promising potential carrier to exert the anti-glioma effect of doxorubicin (DOX) and lonidan (LND) collaboratively. Lip-CTPP elevates the inhibition rate of tumor cell proliferation, migration and invasion, promote apoptosis and necrosis, an interfere with mitochondrial function[1].

IC_{50} & Target

Apoptosis, ROS[1]

In Vitro

Lip-CTPP shows satisfying cellular uptake and mitochondrial uptake[1].
Lip-CTPP (0-20 μg/mL DOX and LND, 24 h) shows cytotoxicity and induces apoptosis in C6 cells[1].
Lip-CTPP inhibits intracellular ATP production and has the most severe damage on the membrane potential of mitochondria[1].
Lip-CTPP possesses excellent potential to induce ROS generation[1].
Lip-CTPP (0.5 μg/mL DOX, 48 h) exhibits strong inhibitory effect both on cell migration and invasion[1]
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	C6 cells
Concentration:	0.1, 0.5, 2.5, 5, 10, and 20 μg/mL of DOX and LND
Incubation Time:	24 h
Result:	Showed cytotoxicity on C6 cells in a concentration-dependent manner.

Apoptosis Analysis[1]

Cell Line:	C6 cells
Concentration:	0.5 μg/mL DOX and LND
Incubation Time:	24 h
Result:	Performed excellent lethality on C6 cells and the apoptosis and necrosis rate is 3.4 times that of Free DOX + LND

Cell Invasion Assay[1]

Cell Line:	C6 cells
Concentration:	0.5 μg/mL DOX
Incubation Time:	48 h
Result:	Obviously restricted the invasion of C6 cells.

In Vivo

Lip-CTPP (3 mg/kg DOX and LND; i.v.; once on day 4, 7, 10 and 13) induces glioma cells apoptosis and inhibits tumor growth[1].
Lip-CTPP can slow down the clearance of free drugs and enhance tumor targeting properties[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Kunming mice (male, 20-25 g), 5 μL of C6 cells (2×10^8 cells/mL) were injected into the striatum[1]
Dosage:	3 mg/kg DOX and LND
Administration:	Tail vein injection, once on day 4, 7, 10 and 13
Result:	Increased the survival time, decreased tumor area and the density of tumor cells.

Animal Model:	Kunming mice (20-25 g)[1]
Dosage:	10 mg/kg DOX and LND
Administration:	Tail vein injection (Pharmacokinetics Analysis)
Result:	Pharmacokinetic parameters of DOX in blood after administration (mean ± SD, n = 3)[1]

parameters	$AUC_{(0-t)}$ (μg/mL*min)	MRT (min)	T_{max} (min)	C_{max} (μg/mL)	$t_{1/2}$ (min)	Clz (L/min/kg)
Lip-CTPP	5901.90 ± 406.18	291.30 ± 1.18	30	23.31 ± 0.42	231.06 ± 43.35	1.68 ± 0.13

Pharmacokinetic parameters of DOX in brain after administration (mean ± SD, n = 3)[1]

parameters	$AUC_{(0-t)}$ (μg/mL*min)	MRT (min)	T_{max} (min)	C_{max} (μg/mL)	$t_{1/2}$ (min)	Clz (L/min/kg)
Lip-CTPP	1757.61 ± 19.35					

REFERENCES

[1]. Jiaqi Lu, et al. Multiple targeted doxorubicin-lonidamine liposomes modified with p-hydroxybenzoic acid and triphenylphosphonium to synergistically treat gl
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McePdfHeight

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

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