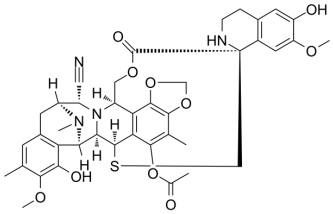
Ecteinascidin 770

Cat. No.:	HY-101191
CAS No.:	114899-80-8
Molecular Formula:	$C_{40}H_{42}N_4O_{10}S$
Molecular Weight:	770.85
Target:	Apoptosis
Pathway:	Apoptosis
Storage:	-20°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (64.86 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.2973 mL	6.4863 mL	12.9727 mL
	5 mM	0.2595 mL	1.2973 mL	2.5945 mL
	10 mM	0.1297 mL	0.6486 mL	1.2973 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: ≥ 2.5 mg/mL (3.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ecteinascidin 770 (ET-770) is a 1,2,3,4-tetrahydroisoquinoline alkaloid with potent anti-cancer activities; inhibits U373MG cells with an IC_{50} of 4.83 nM.

IC_{50} & Target

IC50: 4.83 nM (U373MG cell)[1]; 0.6 nM (HCT116 cell), 2.4 nM (QG56 cell), 0.81 nM (DU145)[2]

In Vitro

Ecteinascidin 770 induces apoptosis of U373MG cells. The IC_{50} concentration of ecteinascidin 770 for killing U373MG glioblastoma cells in culture by using the MTT assay is 4.83 nM by a 72 hour-treatment[1]. The IC_{50} values against human cell lines HCT116, QG56, and DU145 are 0.6, 2.4, and 0.81 nM, respectively[2]. ET-770 is shown to enhance anoikis response of human lung cancer H23 cells in a dose-dependent manner. Ecteinascidin 770 sensitizes the cells by activating the p53 protein, which in turn down-regulates anti-apoptotic myeloid cell leukemia sequence-1 (MCL1) and up-regulates BCL2-associated X protein (BAX) proteins. However, B-cell lymphoma-2 (BCL2) proteins are not significantly affected by Ecteinascidin 770. The anoikis sensitization of ET-770 is observed in H460 lung cancer cells[3].

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

PROTOCOL

Cell Assay [3]

Ecteinascidin 770 is dissolved in DMSO and diluted with appropriate medium. H23 and H460 cells are seeded into 96-well plates at 1×10^5 cell/mL for 24 h and then treated with different concentrations of ecteinascidin 770 for 24 h. Cells are then incubated with 20 μM of XTT reagent for a further 4 h at 37°C. The intensity of the formazan product is measured at 450 nm using a microplate reader. The cell viability is calculated from the optical density (OD) ratio of treated to non-treated control cells and is presented as a percentage to that of the non-treated controls[3].

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

CUSTOMER VALIDATION

- bioRxiv. 2023 Jan 13.

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REFERENCES

[1]. Tabunoki H, et al. Molecular network profiling of U373MG human glioblastoma cells following induction of apoptosis by novel marine-derived anti-cancer 1,2,3,4-tetrahydroisoquinoline alkaloids. Cancer Cell Int. 2012 Apr 11;12(1):14.

[2]. Saktrakulkla P, et al. Chemistry of ecteinascidins. Part 3: preparation of 2'-N-acyl derivatives of ecteinascidin 770 and evaluation of cytotoxicity. Bioorg Med Chem. 2011 Aug 1;19(15):4421-36.

[3]. Powan P, et al. Ecteinascidin 770, a tetrahydroisoquinoline alkaloid, sensitizes human lung cancer cells to anoikis. Anticancer Res. 2013 Feb;33(2):505-12.

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