Tyroserleutide hydrochloride

Cat. No.: HY-106263B

CAS No.: 852982-42-4

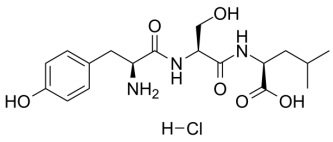
Molecular Formula: $C_{18}H_{28}ClN_3O_6$

Molecular Weight: 417.88

Target: Others

Pathway: Others

Storage: Sealed storage, away from moisture and light, under nitrogen
Powder -80°C 2 years
-20°C 1 year
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (598.26 mM; Need ultrasonic)
H_2O : 2 mg/mL (4.79 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.3930 mL	11.9652 mL	23.9303 mL
5 mM	0.4786 mL	2.3930 mL	4.7861 mL
10 mM	0.2393 mL	1.1965 mL	2.3930 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: ≥ 2.08 mg/mL (4.98 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.98 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tyroserleutide hydrochloride, isolated from the degradation products of porcine spleen[1], is a small molecular tripeptide which inhibits tumor growth both in vitro and in vivo[2].

IC_{50} & Target

Antitumor tripeptide[1][2]

In Vitro	Tyroserleutide (YSL) exhibits immuno-modulating effects, such as enhancing concanavalin (ConA) induced proliferation of mouse spleen lymphocytes, phagocytosis of mouse peritoneal macrophages, and the activity of natural killer (NK) cells[1]. Tyroserleutide (YSL), an immunologically therapeutic tripeptide, can promote hepatocarcinoma cell (H22) apoptosis through downregulating Bcl-2 and cyclin D1 expression[2]. Tyroserleutide is an ideal choice for inducing apoptosis of liver tumor cells[2]. Tyroserleutide inhibits tumor growth and does not cause severe toxicities in the major organs. Tyroserleutide can inhibit tumor cell migration[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Tyroserleutide (10-80 μg/kg; injection (i.p.) one time every day until mice are dead) displays obvious anti-tumor activity. Tyroserleutide significantly prolongs the survival time of the murine H22 implanted mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female Kun-Ming mice (18-22 g, 6 week old) with H22 tumor model[1]
Dosage:	10, 20, 40, and 80 μg/kg
Administration:	Injection (i.p.) one time every day until mice were dead.
Result:	Survival times are 25.53±14.14, 25.82±14.29, 30.47±17.89, 35.06±20.90 days for 10, 20, 40, and 80 μg/kg, respectively.

REFERENCES

[1]. Wang C, et al. Studies on the large scale synthesis and anti-tumor activity of YSL. Prep Biochem Biotechnol. 2003 Aug;33(3):189-95.

[2]. Liang P, et al. pH-Triggered Conformational Change of Antp-Based Drug Delivery Platform for Tumor Treatment with Combined Photothermal Therapy and Chemotherapy. Adv Healthc Mater. 2019 Aug;8(15):e1900306.

[3]. Che X, Lu R, Fu Z, et al. Therapeutic effects of tyroserleutide on lung metastasis of human hepatocellular carcinoma SK-HEP-1 and its mechanism affecting ICAM-1 and MMP-2 and -9. Drug Des Devel Ther. 2018;12:3357-3368.

[4]. Yao Z, Qiu S, Wang L, et al. Tripeptide tyroserleutide enhances the antitumor effects of macrophages and stimulates macrophage secretion of IL-1beta, TNF-alpha, and NO in vitro. Cancer Immunol Immunother. 2006;55(1):56-60.

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