Fz7-21 TFA

Cat. No.: HY-P1454A

Molecular Formula: $C_{85}H_{115}N_{18}F_3O_{25}S_2$

Molecular Weight: 1910.07

Sequence Shortening: Ac-LPSDDLEFWCHVMY-NH2

Target: Wnt

Pathway: Stem Cell/Wnt

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

Ac-LPSDDLEFWCHVMY-NH_2 (TFA salt)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (17.45 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.5235 mL	2.6177 mL	5.2354 mL
	5 mM	0.1047 mL	0.5235 mL	1.0471 mL
	10 mM	0.0524 mL	0.2618 mL	0.5235 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (1.31 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (1.31 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fz7-21 (Ac-LPSDDLEFWCHVMY-NH2) TFA is a potent peptide antagonist of FZD7 receptors , selectively binds to FZD7 CRD subclass and alters the conformation of the CRD and the architecture of its lipid-binding groove. The EC_{50} values are 58 and 34 nM for human and mouse FZD7 CRD, respectively. Fz7-21 TFA impairs the function of FZD7 in Wnt-β-catenin signalling and stem cell function in intestinal organoids[1][2].

IC_{50} & Target

EC50: 58 nM (human FZD7 CRD), 34 nM (mouse FZD7 CRD)[1]

In Vitro

Fz7-21 (Ac-LPSDDLEFWCHVMY-NH2) TFA (0-100 μM; 6 h; HEK293-TB cells) impairs Wnt signaling with IC_{50} value of 100 nM[1].
Fz7-21 (Ac-LPSDDLEFWCHVMY-NH2) TFA (1 μM) blocks WNT3A-mediated stabilization of β-catenin in mouse L cells with IC_{50}

value of 50 nM[1].

Fz7-21 (Ac-LPSDDLEFWCHVMY-NH2) TFA (200 μM; 48 h; LGR5–GFP^{+} stem cells) disrupts LGR^{5+} stem cell function[1].

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

CUSTOMER VALIDATION

- Cell Mol Life Sci. 2022 Sep 19;79(10):523.

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REFERENCES

[1]. Nile AH, et, al. A selective peptide inhibitor of Frizzled 7 receptors disrupts intestinal stem cells. Nat Chem Biol. 2018 Jun;14(6):582-590.

[2]. Larasati Y, et, al. Unlocking the Wnt pathway: Therapeutic potential of selective targeting FZD7 in cancer. Drug Discov Today. 2022 Mar;27(3):777-792.

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