

## TC14012 TFA

## Chemical Properties

CAS No. :

Formula: C92H141F3N34O21S2

Molecular Weight: 2180.44

Keep away from moisture

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

## Biological Description

Description	TC14012 TFA is a peptide-mimetic CXCR4 antagonist (IC <sub>50</sub> = 19.3 nM) and CXCR7 agonist (EC <sub>50</sub> = 350 nM) that promotes the recruitment of β-arrestin by CXCR7 and shares a ligand-binding surface for the CXCR4 and CXCR7 cores.
Targets(IC50)	HIV Protease,CXCR
In vitro	In U87.CD4.CXCR4 cells infected with pseudotyped HIV-1 (X4-tropic strain), TC14012 TFA (1 μM) inhibited viral entry by over 95%. Further evaluation confirmed CXCR4-specific inhibition, with an IC <sub>50</sub> of 19.3 nM, indicating high specificity toward CXCR4-mediated HIV entry[1].TC14012 TFA was evaluated in an anti-HIV assay using MT-4 cells (HIV-infected, MTT assay, EC <sub>50</sub> = 0.4 nM). Cytotoxicity was assessed in uninfected MT-4 cells and human PBMCs (CC <sub>50</sub> >100 μM by MTT; >800 μM by trypan blue). TC14012 TFA demonstrated excellent anti-HIV activity and low cytotoxicity, with a selectivity index (SI) > 2,000,000[1].
In vivo	In a CCl <sub>4</sub> -induced liver fibrosis mouse model, UC-MSCs pretreated with TC14012 TFA were transplanted into mice. Treated cells showed enhanced anti-fibrotic effects compared to untreated UC-MSCs[2].

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	0.4586 mL	2.2931 mL	4.5862 mL
5 mM	0.0917 mL	0.4586 mL	0.9172 mL
10 mM	0.0459 mL	0.2293 mL	0.4586 mL
50 mM	0.0092 mL	0.0459 mL	0.0917 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Tamamura H, et al. Development of specific CXCR4 inhibitors possessing high selectivity indexes as well as complete stability in serum based on an anti-HIV peptide T140. *Bioorg Med Chem Lett*. 2001 Jul 23;11(14):1897-902.

Ding F, Liu Y, Li J, Wei X, Zhao J, Liu X, Zhang L. TC14012 enhances the anti-fibrosis effects of UC-MSCs on the liver by reducing collagen accumulation and ameliorating inflammation. *Stem Cell Res Ther*. 2024 Feb 16;15(1):44.

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