AT-1002 TFA

Cat. No.: HY-114426A

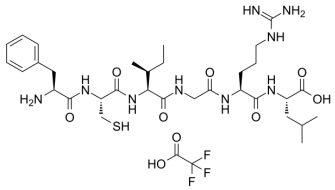
Molecular Formula: $C_{34}H_{54}F_3N_9O_9S$

Molecular Weight: 821.91

Target: Gap Junction Protein

Pathway: Cytoskeleton

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (40.55 mM; Need ultrasonic)
H_2O : 1 mg/mL (1.22 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.2167 mL	6.0834 mL	12.1668 mL
5 mM	0.2433 mL	1.2167 mL	2.4334 mL
10 mM	0.1217 mL	0.6083 mL	1.2167 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 8.33 mg/mL (10.13 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (3.04 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (3.04 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (3.04 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

AT-1002 TFA, a 6-mer synthetic peptide[1], is a tight junction regulator and absorption enhancer[2].

In Vitro

AT-1002, a 6-mer synthetic peptide, belongs to an emerging novel class of compounds that reversibly increase paracellular transport of molecules across the epithelial barrier. AT-1002 can undergo Cys-Cys dimerization[1].
Undifferentiated Caco-2 cells are treated with AT-1002 (0 to 5 mg/mL, 3 or 24 hours) and viability is assessed by measuring cellular ATP content. Treatment with AT-1002 for up to 3 h does not affect cell viability at any concentration. In particular,

the viability of Caco-2 cells is not affected by 5 mg/mL AT-1002. AT-1002 reduces cell viability after 24 h at concentrations of 2.5 mg/mL and higher. However, the cells remain viable after 24 h if the cells are washed after exposure to AT-1002 for 3 h indicating that AT-1002 does not irreversibly damage cells[2].

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

Cell Viability Assay[2]

Cell Line:	Caco-2 cells
Concentration:	0 to 5 mg/mL
Incubation Time:	3 or 24 hours
Result:	Treatment for up to 3 h did not affect cell viability at any concentration. Reduced cell viability after 24 h at concentrations of 2.5 mg/mL and higher.

REFERENCES

[1]. Li M, et al. Structure-activity relationship studies of permeability modulating peptide AT-1002. Bioorg Med Chem Lett. 2008 Aug 15;18(16):4584-6.

[2]. Gopalakrishnan S, et al. Mechanism of action of ZOT-derived peptide AT-1002, a tight junction regulator and absorption enhancer. Int J Pharm. 2009 Jan 5;365(1-2):121-30.

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