

TRAP-14

Cat. No.: HY-P1000
CAS No.: 137339-65-2
Molecular Formula: C₈₁H₁₁₈N₂₀O₂₃
Molecular Weight: 1739.92
Target: Thrombin
Pathway: Metabolic Enzyme/Protease
Storage: Sealed storage, away from moisture
 Powder -80°C 2 years
 -20°C 1 year

SFLLRNPNDKYEPF

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

SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (57.47 mM; Need ultrasonic)
 H₂O : ≥ 50 mg/mL (28.74 mM)
 * "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Solvent Concentration | Mass | | |
|---------------------------|-----------------------|-----------|-----------|-----------|
| | | 1 mg | 5 mg | 10 mg |
| | 1 mM | 0.5747 mL | 2.8737 mL | 5.7474 mL |
| | 5 mM | 0.1149 mL | 0.5747 mL | 1.1495 mL |
| | 10 mM | 0.0575 mL | 0.2874 mL | 0.5747 mL |

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

In Vivo

- Add each solvent one by one: PBS
Solubility: 50 mg/mL (28.74 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (1.44 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (1.44 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (1.44 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

TRAP-14 (SFLLRNPNDKYEPF) is a synthetic thrombin receptor agonist peptide.

In Vitro

Thrombin cleaves its receptor at arginine-41, resulting in the generation of a new receptor NH₂-terminus with the sequence

TRAP-14. This peptide (TRAP-14) may signal a variety of thrombin's responses^[1]. TRAP-14, representing the 14 amino acids starting with Ser-42 of the human thrombin receptor, was found to mimic the effect of thrombin on platelets. Cleavage of the human platelet thrombin receptor by thrombin exposes a new N-terminal which acts as a putative tethered ligand. TRAP-14, corresponding to the new N-terminal region, activates and induces platelet aggregation and serotonin secretion. TRAP-14 is the minimal peptide length which retains full activity in inducing [¹⁴C]serotonin secretion^[2]. TRAP induces rapid morphological changes in HUVECs, with marked increase in the release of prostacyclin, endothelin, platelet activating factor, tissue type plasminogen activator, and plasminogen activator inhibitor-1. Incubation of cells with TRAP also induces a rapid decrease in cell-surface thrombomodulin^[3].

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

REFERENCES

- [1]. Sugama Y, et al. Thrombin receptor 14-amino acid peptide mediates endothelial hyperadhesivity and neutrophil adhesion by P-selectin-dependent mechanism. *Circ Res.* 1992 Oct;71(4):1015-9.
- [2]. Sabo T, et al. Structure-activity studies of the thrombin receptor activating peptide. *Biochem Biophys Res Commun.* 1992 Oct 30;188(2):604-10.
- [3]. Maruyama Y, et al. Thrombin receptor agonist peptide decreases thrombomodulin activity in cultured human umbilical vein endothelial cells. *Biochem Biophys Res Commun.* 1994 Mar 30;199(3):1262-9.
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Caution: Product has not been fully validated for medical applications. For research use only.

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