Trypsin

Cat. No.: HY-129047

CAS No.: 9002-07-7

Target: Protease Activated Receptor (PAR); Ser/Thr Protease

Pathway: GPCR/G Protein; Metabolic Enzyme/Protease

Storage: Store at 4°C, do not freeze

SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (ultrasonic and warming and heat to 60°C)
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (Infinity mM); Clear solution 3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: 2.5 mg/mL (Infinity mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description	Trypsin is a serine protease enzyme, and hydrolyzes proteins at the carboxyl side of the Lysine or Arginine. Trypsin activates PAR2 and PAR4. Trypsin induces cell-to-cell membrane fusion in PDCoV infection by the interaction of S glycoprotein of PDCoV and pAPN. Trypsin also promotes cell proliferation and differentiation. Trypsin can be used in the research of wound healing and neurogenic inflammation[1][2][3][4][6].
IC_{50} & Target	PAR2, PAR4[6]
In Vitro	Trypsin (5 μg/mL, 24 or 48 h) promotes porcine deltacoronavirus (PDCoV) replication in LLC-PK cells[2]. Trypsin (10 and 50 ng/mL, 12 h) enhances PDCoV cell-to-cell spread in LLC-PK cells by promoting membrane fusion in LLC-PK cells[2]. Trypsin (0.05%, 3 h) promotes C6 glioma cell proliferation in serum-free and growth factor-free medium[3]. Trypsin (20 -150 ng/mL, 5 days) potentiates PBMC differentiation[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	LLC-PK cells, ST cells
Concentration:	5 μg/mL

Incubation Time:	24 or 48 h
Result:	Promoted PDCoV replication in LLC-PK cells but not ST cells.

Immunofluorescence[2]

Cell Line:	LLC-PK cells, ST cells
Concentration:	10 and 50 ng/mL
Incubation Time:	12 h
Result:	Significantly increased cell-to-cell fusion activity during PDCoV infection of LLC-PK cells.

In Vivo

Trypsin (100-500 μg per site in 50 μL saline, intradermal injection) induces scratching behaviour in mice[5].

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Animal Model:	Swiss mice[5]
Dosage:	100-500 μg per site, in saline (50 μL)
Administration:	Intradermal injection
Result:	Induced pruritus, and was inhibited by trypsin inhibitor.

CUSTOMER VALIDATION

- Neurochirurgie. 2023 Jul 1;101465.
- Int J Morphol. 2023 Nov, 41(6):1734-1743.

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REFERENCES

[1]. Bhupendra S.Kaphalia. Chapter 16 - Biomarkers of acute and chronic pancreatitis. Biomarkers in Toxicology. 2014, Pages 279-289.

[2]. Yue-Lin Yang,et al. Trypsin promotes porcine deltacoronavirus mediating cell-to-cell fusion in a cell type-dependent manner. Emerg Microbes Infect. 2020 Feb 24;9(1):457-468.

[3]. H Amano, et al. Trypsin promotes C6 glioma cell proliferation in serum- and growth factor-free medium. Neurosci Res. 1996 Jul;25(3):203-8.

[4]. Michael J. V. White, et al. Trypsin Potentiates Human Fibrocyte Differentiation. PLoS One. 2013; 8(8): e70795.

[5]. R Costa, et al. Evidence for the role of neurogenic inflammation components in trypsin-elicited scratching behaviour in mice. Br J Pharmacol. 2008 Jul;154(5):1094-103.

[6]. F Schmidlin, et al. Protease-activated receptors: how proteases signal to cells. Curr Opin Pharmacol. 2001 Dec;1(6):575-82.

[7]. Bhupendra S.Kaphalia, et al. Chapter 16 - Biomarkers of acute and chronic pancreatitis. Biomarkers in Toxicology. 2014, Pages 279-289.

Caution: Product has not been fully validated for medical applications. For research use only.

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