

Trypsin

Cat. No.:	HY-129047
CAS No.:	9002-07-7
Target:	Ser/Thr Protease; Protease Activated Receptor (PAR)
Pathway:	Metabolic Enzyme/Protease; GPCR/G Protein
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

Trypsin

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]} .																
IC₅₀ & Target	PAR2, PAR4 ^[6]																
In Vitro	<p>Trypsin (5 µg/mL, 24 or 48 h) promotes porcine deltacoronavirus (PDCoV) replication in LLC-PK cells^[2].</p> <p>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].</p> <p>Trypsin (0.05%, 3 h) promotes C6 glioma cell proliferation in serum-free and growth factor-free medium^[3].</p> <p>Trypsin (20 -150 ng/mL, 5 days) potentiates PBMC differentiation^[4].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>LLC-PK cells, ST cells</td> </tr> <tr> <td>Concentration:</td> <td>5 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>24 or 48 h</td> </tr> <tr> <td>Result:</td> <td>Promoted PDCoV replication in LLC-PK cells but not ST cells.</td> </tr> </table> <p>Immunofluorescence^[2]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>LLC-PK cells, ST cells</td> </tr> <tr> <td>Concentration:</td> <td>10 and 50 ng/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>12 h</td> </tr> <tr> <td>Result:</td> <td>Significantly increased cell-to-cell fusion activity during PDCoV infection of LLC-PK cells.</td> </tr> </table>	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.	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.
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In Vivo	Trypsin (100-500 µg per site in 50 µL saline, intradermal injection) induces scratching behaviour in mice ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.																

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.

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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