Product Data Sheet

Product Name: Elastase from porcine pancreas
Cat. No.: GC61737

Chemical Properties

Cas. No.	39445-21-1		
Formula	$C_{1135}H_{1759}N_{331}O_{346}S_{10}$	M.Wt	25898.13
Solubility	H_2O : 50 mg/mL (ultrasonic and adjust pH to 9 with NaOH); H_2O : 1 mg/mL (Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Protocol

Cell experiment [1]:

Cell lines	Mouse LE cells (mouse alveolar type II epithelial cells)
Preparation Method	Cells were treated with 0-60 mU/ml Elastase from porcine pancreas for 24 h
Reaction Conditions	0-60 mU/ml Elastase from porcine pancreas ;24 h

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Applications	Elastase from porcine pancreas treatment increased placenta growth factor (PlGF) expression and secretion in LE cells.

Animal experiment [2]:

Animal models	C57BL/6 mice
Preparation Method	Mice were intratracheally instillated with saline (CON) or 100 mU/ml Elastase from porcine pancreas weekly for one month.
Dosage form	100 mU/ml Elastase from porcine pancreas; weekly for one month;i.p
Applications	Elastase from porcine pancreas instillation increase PlGF expression, activation of JNK and p38 MAPK, and PlGF secretion in the pulmonary cells of mice.

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References:

[1]. Hou HH, Cheng SL, et, al. Elastase induced lung epithelial cell apoptosis and emphysema through placenta growth factor. Cell Death Dis. 2013 Sep 5;4(9):e793. doi: 10.1038/cddis.2013.329. PMID: 24008737; PMCID: PMC3789187.

Background

Elastase from porcine pancreas (PPE), as one of the most prominent serine proteases,it can induce protease antiprotease imbalance and has been applied in an animal model of emphysema and Chronic pulmonary obstructive disease (COPD).It has 240 amino acids and a molecular weight of 26 kD. The conserved active site of elastase consists of three residues of serine 214, histidine 71, and aspartate 119 [1-3].

Elastase from porcine pancreas (0-60 mU/ml;24 h) treatment increased placenta growth factor (PlGF) expression and secretion in LE cells[4].

Elastase from porcine pancreas (100 mU/ml; weekly for one month;i.p) instillation increase PlGF expression, activation of JNK and p38 MAPK, and PlGF secretion in the pulmonary cells of mice[4]. Elastase from porcine pancreas can induces emphysema in hamsters[5].

References:
[1]. Shapiro SD. Animal models for COPD. Chest 2000; 117: 223S-227S.
[2]. M. WÜrtele, M. Hahn, K. Hilpert, W. HÖhne. Acta Crystallogr. D Biol. Crystallogr., 56 (2000), p. 520
[3]. Shotton DM, et, al. Amino-acid sequence of porcine pancreatic elastase and its homologies with other serine proteinases. Nature. 1970 Feb 28;225(5235):802-6.
[4]. Hou HH, Cheng SL, et, al. Elastase induced lung epithelial cell apoptosis and emphysema through placenta growth factor. Cell Death Dis. 2013 Sep 5;4(9):e793. doi: 10.1038/cddis.2013.329. PMID: 24008737; PMCID: PMC3789187.
[5]. Stone PJ, Lucey EC, et, al. Lnduction and exacerbation of emphysema in hamsters with human neutrophil elastase inactivated reversibly by a peptide boronic acid. Am Rev Respir Dis. 1990 Jan;141(1):47-52. doi: 10.1164/ajrccm/141.1.47. PMID: 2297186.

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