

CHI3L1 Protein, Human (HEK293, His)

Cat. No.:	HY-P70030
Synonyms:	rHuChitinase-3-like protein 1/CHI3L1, His; Chitinase-3-Like protein 1; 39 kDa Synovial Protein; Cartilage Glycoprotein 39; CGP-39; GP-39; hCGP-39; YKL-40; CHI3L1
Species:	Human
Source:	HEK293
Accession:	P36222 (Y22-T383)
Gene ID:	1116
Molecular Weight:	41-48 kDa

PROPERTIES

AA Sequence	<p> Y K L V C Y Y T S W S Q Y R E G D G S C F P D A L D R F L C T H I I Y S F A N I S N D H I D T W E W N D V T L Y G M L N T L K N R N P N L K T L L S V G G W N F G S Q R F S K I A S N T Q S R R T F I K S V P P F L R T H G F D G L D L A W L Y P G R R D K Q H F T T L I K E M K A E F I K E A Q P G K K Q L L L S A A L S A G K V T I D S S Y D I A K I S Q H L D F I S I M T Y D F H G A W R G T T G H H S P L F R G Q E D A S P D R F S N T D Y A V G Y M L R L G A P A S K L V M G I P T F G R S F T L A S S E T G V G A P I S G P G I P G R F T K E A G T L A Y Y E I C D F L R G A T V H R I L G Q Q V P Y A T K G N Q W V G Y D D Q E S V K S K V Q Y L K D R Q L A G A M V W A L D L D D F Q G S F C G Q D L R F P L T N A I K D A L A A T </p>
Biological Activity	Measured by the ability of the immobilized protein to support the adhesion of FaDu human squamous cell carcinoma cells. The ED ₅₀ for this effect is 2.603 µg/mL, corresponding to a specific activity is 384.1721 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, 2 mM EDTA, pH 7.4 or 20 mM Tris-HCl, 300 mM NaCl, 2 mM EDTA, pH8.5.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

Chitinase-3-like protein 1 (CHI3L1) is a carbohydrate-binding lectin with a specific affinity for chitin, although it lacks chitinase activity. Its main role extends beyond chitin degradation, as it is implicated in tissue remodeling and cellular responses to environmental changes. CHI3L1 plays a crucial role in T-helper cell type 2 (Th2) inflammatory responses and IL-13-induced inflammation, influencing allergen sensitization, inflammatory cell apoptosis, dendritic cell accumulation, and the differentiation of M2 macrophages. Additionally, it facilitates the invasion of pathogenic enteric bacteria into colonic mucosa and lymphoid organs. CHI3L1 is involved in the activation of the AKT1 signaling pathway, leading to IL8 production in colonic epithelial cells. Furthermore, it regulates antibacterial responses in the lungs, contributing to macrophage bacterial killing, controlling bacterial dissemination, and enhancing host tolerance. In lung tissues, CHI3L1 also plays a role in regulating hyperoxia-induced injury, inflammation, and epithelial apoptosis. Structurally, CHI3L1 functions as a monomer.

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

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