Recombinant Human Chitinase 3-like 2

Catalog Number: 5112-CH

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Tyr27-Leu390, with a C-terminal 10-His tag Accession # Q15782
N-terminal Sequence Analysis	Tyr27
Predicted Molecular Mass	42.2 kDa

SPECIFICATIONS

SDS-PAGE	40 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of FaDu human squamous cell carcinoma cells. When 5 x 10^4 cells per well are added to rhCHI3L2 coated plates for 30 minutes at 37 °C, cell adhesion is enhanced in a dose dependent manner with typical ED_{50} range of 0.7-2.8 µg/mL. Opitimal dilutions should be determined by each laboratory for each application.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Chitinase 3-like 2 (CHI3L2), also called chondrocyte protein 39 or YKL-39, is a 39 kDa potentially glycosylated member of the glycosyl hydrolase 18 family (1 - 3). It is secreted by synovial fibroblasts, chondrocytes, and TGFβ/IL-4-stimulated monocyte-derived macrophages (1, 4, 5). The human CHI3L2 cDNA encodes 390 amino acids (aa), including a 26 aa signal sequence and a 364 aa mature region. Potential alternate start sites at Met-24 and Met+80 would create isoforms of 413 aa and 311 aa, while a potential deletion of aa 15 - 24 would create a 380 aa isoform (6). Mature human CHI3L2 shares 89%, 87% and 84% aa sequence identity with bovine, porcine and equine CHI3L2, respectively. The rodent genome does not include a CHI3L2 ortholog (2). Human CHI3L1 and CHI3L2 share 43% aa sequence identity. Neither shows chitotriosidase activity, but both bind chitin and are thus termed chi-lectins (1 - 3). Unlike CHI3L1, CHI3L2 does not bind heparin (1). While CHI3L1 is the major protein excreted by chondrocytes, up-regulation of CHI3L2 and not CHI3L1 correlates with osteoarthritic cartilage degeneration (1, 7, 8). CHI3L2 has been proposed as a potential biomarker for osteoarthritis (4, 7, 8). CHI3L1 has been found to coordinate adhesion receptors and promote cell signaling and tumor angiogenesis; like CHI3L1, CHI3L2 can enhance cell adhesion (9).

References:

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