Data Sheet (Cat.No.TMPY-01933)

TargetMol

CHI3L2 Protein, Human, Recombinant (His)

General Information

Synonyms: YKL-39;CHIL2;chitinase 3 like 2;YKL39

Protein Construction: Tyr27-Leu390

Species: Human

Expression Host: HEK293 Cells

Accession: AAH11460.1

Molecular Weight: 41.94 kDa (predicted); 40 kDa. (reducing conditions)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 95% as determined by SDS-PAGE

Endotoxin: < 1.0 EU/μg of the protein as determined by the LAL method.

Formulation: Lyophilized from a 0.2 μm filtered solution of PBS, 5% Trehalose, 5% Mannitol, 0.01% Tween 80, pH 7.4.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Chondrocyte protein 39 (YKL-39), also known as Chitinase 3-like 2 (CHI3L2), is a secretory protein of articular chondrocytes belonging to the glycosyl hydrolase 18 family. Its highest expression is in chondrocytes, followed by synoviocytes, lung and heart. YKL-39/CHI3L2 is not detected in spleen, pancreas, and liver. YKL-39/CHI3L2 may also be expressed in developing brain and placenta. YKL-39/CHI3L2, a cartilage-related protein, is found to induce arthritis accompanied by pathologic changes in bone and cartilage. A better understanding of the immune

response against cartilage-related components including YKL-39 may help to elucidate the pathological processes of arthritic disorders. Upregulation of YKL-39/CHI3L2 in osteoarthritic cartilage suggests that YKL-39/CHI3L2 may be a more accurate marker of chondrocyte activation than YKL-40, although it has yet to be established as a suitable marker in synovial fluid and serum. The decreased expression of YKL-40 by osteoarthritic chondrocytes is surprising as increased levels have been reported in rheumatoid and osteoarthritic synovial fluid, where it may derive from activated synovial cells or osteophytic tissue or by increased matrix destruction in the osteoarthritic joint. YKL-39 and YKL-40 are potentially interesting marker molecules for arthritic joint disease because they are abundantly expressed by both normal and osteoarthritic chondrocytes.

Reference

Sakata M,et al. (2002) YKL-39, a human cartilage-related protein, induces arthritis in mice. Clin Exp Rheumatol. 20 (3): 343-50.

Areshkov PA,et al. (2010) Chitinase 3-like protein 2 (CHI3L2, YKL-39) activates phosphorylation of extracellular signal-regulated kinases ERK1/ERK2 in human embryonic kidney (HEK293) and human glioblastoma (U87 MG) cells. Tsitol Genet. 44(1): 3-9.

Steck E,et al. (2002) Enhanced expression of the human chitinase 3-like 2 gene (YKL-39) but not chitinase 3-like 1 gene (YKL-40) in osteoarthritic cartilage. Biochem Biophys Res Commun. 299(1): 109-15.

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