

# YKL-39 (N-18): sc-67991

## BACKGROUND

YKL-39, also known as CHI3L2 (chitinase 3-like 2) or YKL39, is a 390 amino acid cartilage protein that belongs to the chitinase family of chitin-fragmenting hydrolases. Highly expressed in chondrocytes (cartilage cells) and synovial cells (fibroblastic cells that line joint cavities), YKL-39 binds glycan structures with high affinity. Although related to bacterial chitinases, YKL-39 lacks the characteristic glutamate active site and, thus, does not have enzymatic chitinase activity. Patients affected with rheumatoid arthritis (RA) have autoimmunity against YKL-39, suggesting that YKL-39 is involved in osteoarthritic and/or rheumatoid joint disease. Additionally, YKL-39 is upregulated in early degenerative cartilage diseases (such as RA) and may be a marker of chondrocyte activation in these autoimmune conditions.

## REFERENCES

- Hu, B., et al. 1996. Isolation and sequence of a novel human chondrocyte protein related to mammalian members of the chitinase protein family. *J. Biol. Chem.* 271: 19415-19420.
- Sakata, M., et al. 2002. YKL-39, a human cartilage-related protein, induces arthritis in mice. *Clin. Exp. Rheumatol.* 20: 343-350.
- Tsuruha, J., et al. 2002. Autoimmunity against YKL-39, a human cartilage derived protein, in patients with osteoarthritis. *J. Rheumatol.* 29: 1459-1466.
- 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: 109-115.
- Knorr, T., et al. 2003. YKL-39 (chitinase 3-like protein 2), but not YKL-40 (chitinase 3-like protein 1), is up regulated in osteoarthritic chondrocytes. *Ann. Rheum. Dis.* 62: 995-998.
- Du, H., et al. 2005. The prevalence of autoantibodies against cartilage intermediate layer protein, YKL-39 osteopontin, and cyclic citrullinated peptide in patients with early-stage knee osteoarthritis: evidence of a variety of autoimmune processes. *Rheumatol. Int.* 26: 35-41.
- Kzhyshkowska, J., et al. 2006. Novel stabilin-1 interacting chitinase-like protein (SI-CLP) is up-regulated in alternatively activated macrophages and secreted via lysosomal pathway. *Blood* 107: 3221-3228.

## CHROMOSOMAL LOCATION

Genetic locus: CHI3L2 (human) mapping to 1p13.3.

## SOURCE

YKL-39 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of YKL-39 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67991 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

YKL-39 (N-18) is recommended for detection of YKL-39 precursor of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for YKL-39 siRNA (h): sc-63231, YKL-39 shRNA Plasmid (h): sc-63231-SH and YKL-39 shRNA (h) Lentiviral Particles: sc-63231-V.

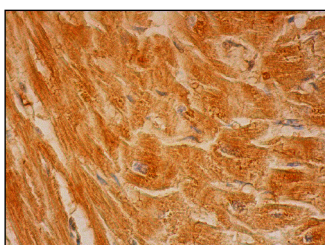
Molecular Weight of YKL-39: 44 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



YKL-39 (N-18): sc-67991. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.