

Chitotriosidase (A-11): sc-271460

BACKGROUND

Chitinases are ubiquitous chitin-fragmenting hydrolases. The chitinase Chitotriosidase is capable of cleaving natural chitin and chitin-like substrates in humans and may play a role in immunity against pathogens containing chitin. Activated human macrophages secrete chitotriosidase and increased plasma levels of chitotriosidase are a feature of patients suffering from Gaucher disease. Expression of mouse Chitotriosidase is restricted to brain, skin, bone marrow, kidney, tongue, stomach and testis. The homology between Chitotriosidase and chitinases found in lower organisms is significant. Acidic mammalian chitinase precursor (AMCase) degrades chitotriose and chitin. AMCase is highly expressed in stomach tissues and is primarily a secreted protein. It is involved in Th2-mediated inflammation and may play a role in asthma and allergic diseases.

REFERENCES

- Zhu, Z., et al. 2004. Acidic mammalian chitinase in asthmatic Th2 inflammation and IL-13 pathway activation. *Science* 304: 1678-1682.
- Malaguarna, L., et al. 2005. Interferon- γ , tumor necrosis factor- α , and lipopolysaccharide promote chitotriosidase gene expression in human macrophages. *J. Clin. Lab. Anal.* 19: 128-132.
- Di Rosa, M., et al. 2005. Effect of interferon- γ , interleukin-10, lipo-poly-saccharide and tumor necrosis factor- α on chitotriosidase synthesis in human macrophages. *Clin. Chem. Lab. Med.* 43: 499-502.
- Aerts, J.M., et al. 2005. Identification and use of biomarkers in Gaucher disease and other lysosomal storage diseases. *Acta Paediatr. Suppl.* 94: 43-46.
- Deegan, P.B., et al. 2005. Clinical evaluation of biomarkers in Gaucher disease. *Acta Paediatr. Suppl.* 94: 47-50.
- Brinkman, J., et al. 2005. Plasma chitotriosidase and CCL18: early biochemical surrogate markers in type B Niemann-Pick disease. *J. Inherit. Metab. Dis.* 28: 13-20.

CHROMOSOMAL LOCATION

Genetic locus: CHIT1 (human) mapping to 1q32.1; Chit1 (mouse) mapping to 1 E4.

SOURCE

Chitotriosidase (A-11) is a mouse monoclonal antibody raised against amino acids 150-215 mapping within an internal region of Chitotriosidase of human origin.

PRODUCT

Each vial contains 200 μ g IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Chitotriosidase (A-11) is recommended for detection of Chitotriosidase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (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 Chitotriosidase siRNA (h): sc-60365, Chitotriosidase siRNA (m): sc-60366, Chitotriosidase shRNA Plasmid (h): sc-60365-SH, Chitotriosidase shRNA Plasmid (m): sc-60366-SH, Chitotriosidase shRNA (h) Lentiviral Particles: sc-60365-V and Chitotriosidase shRNA (m) Lentiviral Particles: sc-60366-V.

Molecular Weight of Chitotriosidase precursor: 50 kDa.

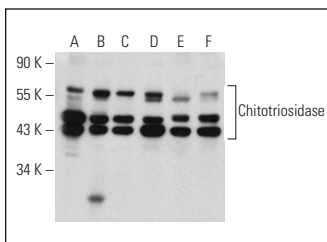
Molecular Weight of Chitotriosidase processed form: 39 kDa.

Positive Controls: Daudi cell lysate: sc-2415, Hep G2 cell lysate: sc-2227 or TK-1 whole cell lysate: sc-364798.

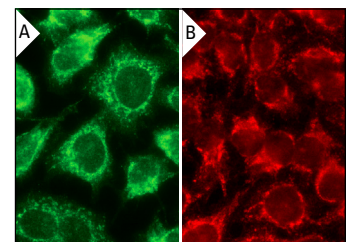
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Chitotriosidase (A-11): sc-271460. Western blot analysis of Chitotriosidase expression in Hep G2 (A), Daudi (B), TK-1 (C), AMJ2-C8 (D), NRK (E) and RIN-m5F (F) whole cell lysates.



Chitotriosidase (A-11): sc-271460. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A,B).

SELECT PRODUCT CITATIONS

- Yap, J., et al. 2020. Expression of Chitotriosidase in macrophages modulates atherosclerotic plaque formation in hyperlipidemic mice. *Front. Physiol.* 11: 714.

RESEARCH USE

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