

AMCase (M-19): sc-49355

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's 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

1. Zhu, Z., et al. 2004. Acidic mammalian chitinase in asthmatic Th2 inflammation and IL-13 pathway activation. *Science* 304: 1678-1682.
2. Malaguarnera, 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.
3. Di Rosa, M., et al. 2005. Effect of interferon- γ , interleukin-10, lipopolysaccharide and tumor necrosis factor α on Chitotriosidase synthesis in human macrophages. *Clin. Chem. Lab. Med.* 43:499-502.
4. 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; discussion 37-38.
5. Deegan, P.B., et al. 2005. Clinical evaluation of biomarkers in Gaucher disease. *Acta Paediatr. Suppl.* 94: 47-50; discussion 37-38.
6. Brinkman, J., et al. 2005. Plasma Chitotriosidase and CCL18: early biochemical surrogate markers in type B Niemann-Pick disease. *J. Inher. Metab. Dis.* 28:13-20.
7. Boot, R.G., et al. 2005. Marked differences in tissue-specific expression of chitinases in mouse and man. *J. Histochem. Cytochem.* 53: 1283-1292.
8. Chou, Y.T., et al. 2006. Kinetic characterization of recombinant human acidic mammalian chitinase. *Biochemistry* 45: 4444-4454.

CHROMOSOMAL LOCATION

Genetic locus: Chia (mouse) mapping to 3 F2.2.

SOURCE

AMCase (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AMCase of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-49355 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AMCase (M-19) is recommended for detection of AMCase of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AMCase siRNA (m): sc-60161, AMCase shRNA Plasmid (m): sc-60161-SH and AMCase shRNA (m) Lentiviral Particles: sc-60161-V.

Molecular Weight of AMCase: 50/39 kDa.

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.

SELECT PRODUCT CITATIONS

1. Jimenez, S., et al. 2008. Inflammatory response in the hippocampus of PS1M146L/APP751SL mouse model of Alzheimer's disease: age-dependent switch in the microglial phenotype from alternative to classic. *J. Neurosci.* 28: 11650-11661.
2. Colton, C.A. 2009. Heterogeneity of microglial activation in the innate immune response in the brain. *J. Neuroimmune Pharmacol.* 4: 399-418.
3. Qureshi, A.M., et al. 2011. Chitinase-like proteins are autoantigens in a model of inflammation-promoted incipient neoplasia. *Genes Cancer* 2: 74-87.

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 or our catalog for detailed protocols and support products.