SANTA CRUZ BIOTECHNOLOGY, INC.

AACT (H-50): sc-22747

The Power to Question

BACKGROUND

The serine proteinase inhibitors (serpins) are a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. The most abundant serpins in human plasma are α 1-antitrypsin (AAT) and α 1-antichymotrypsin (AACT). AACT (also called A1AC and SERPINA3) is a plasma protease inhibitor synthesized in the liver as a single glycopeptide chain. In human, the normal serum level of AACT is about one-tenth that of AAT, with which it shares nucleic acid and protein sequence homology. Both are major acute phase reactants; their concentrations in plasma increase in response to trauma, surgery and infection. Elevated levels of AACT are widely, but not universally, reported in the cerebrospinal fluid and plasma of AD patients. Prostate-specific antigen (PSA) and its SDS-stable complex with AACT are in widespread use as markers for the diagnosis of prostate cancer. AACT deficiency may also be a possible cause of chronic liver disease.

REFERENCES

1. Miyake, H., et al. 2001. Value of prostate specific antigen α-1-antichymotrypsin complex for the detection of prostate cancer in patients with a PSA level of 4.1-10.0 ng/mL: comparison with PSA-related parameters. Int. J. Urol. 8: 589-593.
2. Kalsheker, N., et al. 2002. Gene regulation of the serine proteinase inhibitors α-1-antitrypsin and α-1-antichymotrypsin. Biochem Soc. Trans. 30: 93-98.
3. Yoon, D., et al. 2002. Role of α-1-antichymotrypsin deficiency in promoting cirrhosis in two siblings with heterozygous α-1-antitrypsin deficiency phenotype SZ. Gut 50: 730-732.
4. Wang, X., et al. 2002. Distribution of plasma α-1-antichymotrypsin levels in Alzheimer disease patients and controls and their genetic controls. Neurobiol. Aging 23: 377-382.
5. Hsieh, M.C., et al. 2002. Inhibition of prostate-specific antigen (PSA) by α-1-antichymotrypsin: salt-dependent activation mediated by a conformational change. Biochemistry 41: 2990-2997.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 107280. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: SERPINA3 (human) mapping to 14q32.13.

SOURCE

AACT (H-50) is a rabbit polyclonal antibody raised against amino acids 128-177 mapping to an internal region of AACT 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.

RESEARCH USE

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

APPLICATIONS

AACT (H-50) is recommended for detection of AACT of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 AACT siRNA (h): sc-40944, AACT shRNA Plasmid (h): sc-40944-SH and AACT shRNA (h) Lentiviral Particles: sc-40944-V.

Molecular Weight (predicted) of AACT: 48 kDa.

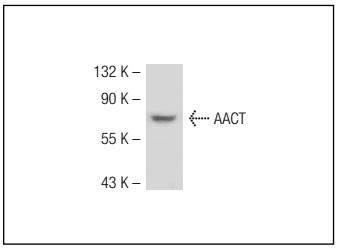
Molecular Weight (observed) of AACT: 65-76 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, T98G cell lysate: sc-2294 or U-87 MG cell lysate: sc-2411.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AACT (H-50): sc-22747. Western blot analysis of AACT expression in T98G whole cell lysate.

STORAGE

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