SANTA CRUZ BIOTECHNOLOGY, INC.

AACT (F-10): sc-518261

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

AACT (F-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 294-320 of AACT of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AACT (F-10) is available conjugated to agarose (sc-518261 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518261 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518261 PE), fluorescein (sc-518261 FITC), Alexa Fluor® 488 (sc-518261 AF488), Alexa Fluor® 546 (sc-518261 AF546), Alexa Fluor® 594 (sc-518261 AF594) or Alexa Fluor® 647 (sc-518261 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518261 AF680) or Alexa Fluor® 790 (sc-518261 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

AACT (F-10) is recommended for detection of AACT of human origin by Western Blotting (starting dilution 1:100, 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.

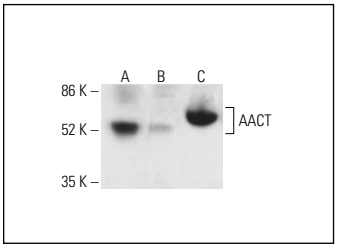
Molecular Weight (observed) of AACT: 65-76 kDa.

Positive Controls: SK-MEL-24 whole cell lysate: sc-364259, Hep G2 cell lysate: sc-2227 or human plasma extract: sc-364374.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



AACT (F-10): sc-518261. Western blot analysis of AACT expression in SK-MEL-24 (**A**) and Hep G2 (**B**) whole cell lysates and human plasma extract (**C**). Detection reagent used: m-IgG_1 BP-HRP: sc-525408.

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 for detailed protocols and support products.