SANTA CRUZ BIOTECHNOLOGY, INC.

Acinus (2005C3a): sc-81177

BACKGROUND

The complex process of apoptosis requires the systematic activation of cysteine proteases, the condensation of chromatin and the fragmentation of DNA. Chromatin condensation occurs following the proteolytic activation of the caspases and the subsequent induction of the nuclear protein Acinus (apoptotic chromatin condensation inducer in the nucleus). Various isoforms of Acinus, which are generated from alternative splicing patterns, include AcinusL, AcinusS and AcinusS'. Acinus is ubiquitously expressed and predominantly localized to the nucleus, where it associates with both the nuclear membrane and the nucleoplasm. Combined *in vitro* and *in vivo* studies indicate that during apoptosis caspase-3 cleaves the carboxy-terminus of Acinus to generate the soluble protein p23, which is essential for inducing chromatin condensation.

REFERENCES

1. Kass, G.E., et al. 1996. Chromatin condensation during apoptosis requires ATP. Biochem. J. 318: 749-752.
2. Ishikawa, K., et al. 1998. Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 5: 169-176.
3. Sakahira, H., et al. 1999. Apoptotic nuclear morphological change without DNA fragmentation. Curr. Biol. 9: 543-546.
4. Porter, A.G., et al. 1999. Emerging roles of caspase-3 in apoptosis. Cell Death Differ. 6: 99-104.
5. Samali, A., et al. 1999. Apoptosis: cell death defined by caspase activation. Cell Death Differ. 6: 495-496.
6. Sahara, S., et al. 1999. Acinus is a caspase-3-activated protein required for apoptotic chromatin condensation. Nature 401: 168-173.
7. Schwerk, C., et al. 2003. ASAP, a novel protein complex involved in RNA processing and apoptosis. Mol. Cell. Biol. 23: 2981-2990.

CHROMOSOMAL LOCATION

Genetic locus: ACIN1 (human) mapping to 14q11.2.

SOURCE

Acinus (2005C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Acinus of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

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.

APPLICATIONS

Acinus (2005C3a) is recommended for detection of Acinus of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Acinus siRNA (h): sc-105033, Acinus shRNA Plasmid (h): sc-105033-SH and Acinus shRNA (h) Lentiviral Particles: sc-105033-V.

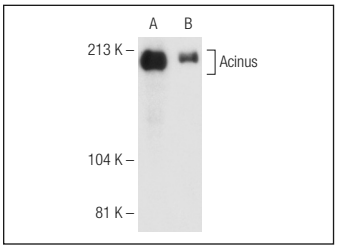
Molecular Weight of AcinusL: 220 kDa.

Molecular Weight of AcinusS: 98 kDa.

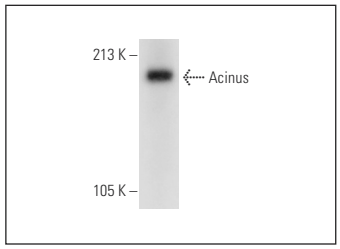
Molecular Weight of AcinusS': 94 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, K-562 nuclear extract: sc-2130 or HeLa nuclear extract: sc-2120.

DATA



Acinus (2005C3a): sc-81177. Western blot analysis of Acinus expression in Jurkat (**A**) and K-562 (**B**) nuclear extracts.



Acinus (2005C3a): sc-81177. Western blot analysis of Acinus expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

1. Zhai, D., et al. 2022. LINC01194 recruits NUMA1 to promote ubiquitination of RYR2 to enhance malignant progression in triple-negative breast cancer. Cancer Lett. 544: 215797.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.