SANTA CRUZ BIOTECHNOLOGY, INC.

# AKAP 95 (22-Z): sc-100643

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The type II cAMP-protein kinase (PKA) is a multifunctional kinase with a broad range of substrates. Specificity of PKA signaling is thought to be mediated by the compartmentalization of the kinase to specific sites within the cell. To maintain this specific localization, the R subunit (RII) of PKA interacts with specific RII-anchoring proteins. The family of RII-anchoring proteins has been designated A-kinase anchoring proteins (AKAP). AKAP 95, also known as AKAP 8, is a nuclear matrix protein predominantly expressed in liver, heart, pancreas, kidney and skeletal muscle. During mitosis, AKAP 95 is recruited to the chromosomes and plays an essential role in mitotic progression. Characteristic of its family, AKAP 95 participates in PKA signaling through an interaction with the RII regulatory subunit. In addition, AKAP 95 forms a complex with HA95 and HDAC3 and is required for the deacetylation of Histone H3 in mitosis.

## REFERENCES


1. Coghlan, V.M., et al. 1993. A-kinase anchoring proteins: a key to selective activation of cAMP-responsive events? Mol. Cell. Biochem. 127: 309-319.
2. Coghlan, V.M., et al. 1995. Association of protein kinase A and protein phosphatase 2B with a common anchoring protein. Science 267: 108-111.


## CHROMOSOMAL LOCATION

Genetic locus: AKAP8 (human) mapping to 19p13.12.

## SOURCE

AKAP 95 (22-Z) is a mouse monoclonal antibody raised against recombinant AKAP 95 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2a}$ kappa light chain 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

AKAP 95 (22-Z) is recommended for detection of AKAP 95 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), immunohistochemistry (including paraffin-embedded sections) (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 AKAP 95 siRNA (h): sc-29662, AKAP 95 shRNA Plasmid (h): sc-29662-SH and AKAP 95 shRNA (h) Lentiviral Particles: sc-29662-V.

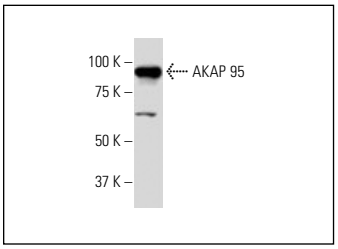
Molecular Weight of AKAP 95: 95 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or human pancreas extract: sc-363770.

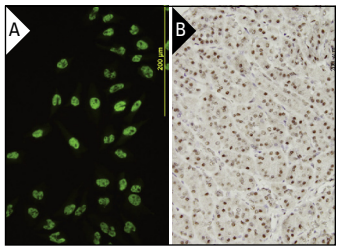
## RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA




AKAP 95 (22-Z): sc-100643. Western blot analysis of AKAP 95 expression in HeLa nuclear extract.




AKAP 8 (22-Z): sc-100643. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human pancreas tissue showing nuclear localization (**B**).

## SELECT PRODUCT CITATIONS


1. Yu, X., et al. 2015. Correlation between the protein expression of A-kinase anchor protein 95, cyclin D3 and AKT and pathological indicators in lung cancer tissues. Exp. Ther. Med. 10: 1175-1181.
2. Zhao, S., et al. 2015. Expression of AKAP95, Cx43, CyclinE1 and CyclinD1 in esophageal cancer and their association with the clinical and pathological parameters. Int. J. Clin. Exp. Med. 8: 7324-7332.
3. Chen, X., et al. 2016. Dynamic changes in protein interaction between AKAP95 and Cx43 during cell cycle progression of A549 cells. Sci. Rep. 6: 21224.
4. Kong, X.Y., et al. 2016. AKAP95 promotes cell cycle progression via interactions with cyclin E and low molecular weight cyclin E. Am. J. Transl. Res. 8: 811-826.
5. Bieluszewska, A., et al. 2017. PKA-binding domain of AKAP8 is essential for direct interaction with DPY30 protein. FEBS J. 285: 947-964.
6. Chen, R., et al. 2020. Cx43 and AKAP95 regulate $G_1$/S conversion by competitively binding to cyclin E1/E2 in lung cancer cells. Thorac. Cancer 11: 1594-1602.


## STORAGE

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