SANTA CRUZ BIOTECHNOLOGY, INC.

WAP (E-8): sc-398276

BACKGROUND

Whey acidic protein (WAP), a hormonally-regulated acidic, cysteine-rich protein, is a major whey protein found in rodent milk and may belong to a family of protease inhibitors. The WAP gene consists of four exons and three introns. The middle two exons encode the two cysteine-rich regions which form separate protein domains. WAP also contain a N-terminal signal peptide of 19 amino acids. The WAP gene is expressed in mammary epithelial cells, is induced several thousand-fold during pregnancy and is under the control of lactogenic hormones. Induction of WAP gene is caused by glucocorticoid, PRL, and Insulin. Expression of WAP mRNA is highly dependent on stage of estrous, with detection restricted to midcycle. Low levels of WAP RNA are found in some nonmammary tissues such as tongue, pancreas, and pituitary gland, but not in others, for examle, heart and brain. WAP secretion in milk occurs throughout lactation and is restricted to number of species, including mouse, rat, rabbit, camel, and porcine. Mouse mammary epithelial cells cultured on basement membrane-type matrix express high levels of WAP mRNA and secrete the protein into the lumen. This expression is dependent upon the formation of the alveoli-like spheres.

REFERENCES

1. Hennighausen, L.G., et al. 1982. Mouse whey acidic protein is a novel member of the family of "four-disulfide core" proteins. Nucleic Acids Res. 10: 2677-2684.
2. Hennighausen, L.G., et al. 1982. Comparative sequence analysis of the mRNAs coding for mouse and rat whey protein. Nucleic Acids Res. 10: 3733-3744.

CHROMOSOMAL LOCATION

Genetic locus: Wap (mouse) mapping to 11 A1.

SOURCE

WAP (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 60-89 within an internal region of WAP of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

WAP (E-8) is available conjugated to agarose (sc-398276 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398276 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398276 PE), fluorescein (sc-398276 FITC), Alexa Fluor® 488 (sc-398276 AF488), Alexa Fluor® 546 (sc-398276 AF546), Alexa Fluor® 594 (sc-398276 AF594) or Alexa Fluor® 647 (sc-398276 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398276 AF680) or Alexa Fluor® 790 (sc-398276 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398276 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

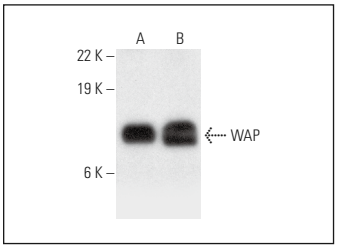
WAP (E-8) is recommended for detection of WAP of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for WAP siRNA (m): sc-37182, WAP shRNA Plasmid (m): sc-37182-SH and WAP shRNA (m) Lentiviral Particles: sc-37182-V.

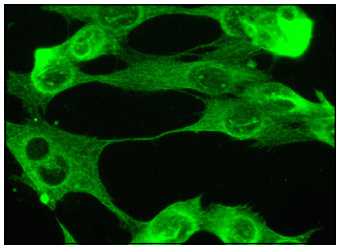
Molecular Weight of WAP: 14 kDa.

Positive Controls: mouse pituitary gland extract: sc-364246.

DATA



WAP (E-8): sc-398276. Western blot analysis of WAP expression in mouse pituitary gland (**A**) and rat pituitary (**B**) tissue extracts.



WAP (E-8): sc-398276. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Altamirano, G.A., et al. 2020. Bisphenol A and benzophenone-3 exposure alters milk protein expression and its transcriptional regulation during functional differentiation of the mammary gland *in vitro.* Environ. Res. 191: 110185.
2. Chen, J., et al. 2023. Niacin/β-hydroxybutyrate regulates milk fat and milk protein synthesis via the GPR109A/Gi/mTORC1 pathway. Food Funct. 14: 2642-2656.

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.