SANTA CRUZ BIOTECHNOLOGY, INC.

WAP (M-16): sc-14832

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 pig. 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.

CHROMOSOMAL LOCATION

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

SOURCE

WAP (M-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of WAP of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14832 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

WAP (M-16) is recommended for detection of WAP of mouse and, to a lesser extent, rat 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).

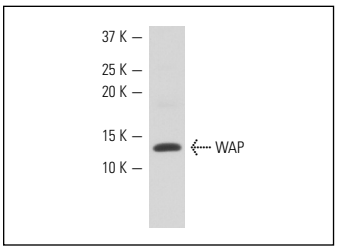
Suitable for use as control antibody for WAP siRNA (m): sc-37182, WAP shRNA Plasmid (m): sc-37182-SH and WAP shRNA (m) Lentiviral Particles: sc-37182-V.

Molecular Weight of WAP: 14 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



WAP (M-16): sc-14832. Western blot analysis of WAP expression in rat pituitary gland tissue extract.

SELECT PRODUCT CITATIONS

1. Schroeder, J.A., et al. 2004. MUC1 overexpression results in mammary gland tumorigenesis and prolonged alveolar differentiation. Oncogene 23: 5739-5747.
2. Iwamori, T., et al. 2005. Aberrant development of mammary glands, but precocious expression of β-casein in transgenic females ubiquitously expressing whey acidic protein transgene. J. Reprod. Dev. 51: 579-592.
3. Nukumi, N., et al. 2007. Reduction of tumorigenesis and invasion of human breast cancer cells by whey acidic protein (WAP). Cancer Lett. 252: 65-74.
4. Nukumi, N., et al. 2007. Whey acidic protein (WAP) regulates the proliferation of mammary epithelial cells by preventing serine protease from degrading laminin. J. Cell. Physiol. 213: 793-800.
5. Kotb, A.M., et al. 2011. Replacement of E-cadherin by N-cadherin in the mammary gland leads to fibrocystic changes and tumor formation. Breast Cancer Res. 13: R104.
6. Oliver, C.H., et al. 2012. The Stat6-regulated KRAB domain zinc finger protein Zfp157 regulates the balance of lineages in mammary glands and compensates for loss of Gata-3. Genes Dev. 26: 1086-1097.