AFP (H-9): sc-166335

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

α-fetoprotein (AFP) is expressed in fetal liver at varying levels throughout development and is present only in trace amounts in normal adult tissues. AFP can be detected at abnormally high concentrations in hepatocellular carcinomas as well as in the plasma and ascitic fluid of adults with hepatoma. High AFP concentrations have been correlated with tumor cell growth, indicating that AFP can serve as a tumor marker. AFP binds copper, nickel and fatty acids, and in some cases may bind serum albumin or estrogen. It has been demonstrated that the AFP promoter is a target for NF-1 (nuclear factor-1), HNF-1 (hepatocyte nuclear factor-1) and C/EBP transcription factors. While HNF-1 binding to the AFP promoter results in AFP expression, NF-1 binding results in a decrease in AFP promoter activity.

REFERENCES

1. Aoyagi, Y., et al. 1978. Copper (II)-binding ability of human α-fetoprotein. Cancer Res. 38: 3483-3486.

2. Stefanova, I., et al. 1988. Monoclonal antibodies against human α-fetoprotein. Exploitation of an unusual calcium-dependent interaction with the antigen for analytical and preparative purposes. J. Immunol. Methods 111: 67-73.

CHROMOSOMAL LOCATION

Genetic locus: AFP (human) mapping to 4q13.3; Afp (mouse) mapping to 5 E1.

SOURCE

AFP (H-9) is a mouse monoclonal antibody raised against amino acids 171-310 of AFP 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.

APPLICATIONS

AFP (H-9) is recommended for detection of AFP of mouse, rat and 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 AFP siRNA (h2): sc-270319, AFP siRNA (m): sc-29649, AFP shRNA Plasmid (h2): sc-270319-SH, AFP shRNA Plasmid (m): sc-29649-SH, AFP shRNA (h2) Lentiviral Particles: sc-270319-V and AFP shRNA (m) Lentiviral Particles: sc-29649-V.

Molecular Weight of AFP: 68 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or AFP (h2): 293T Lysate: sc-170237.
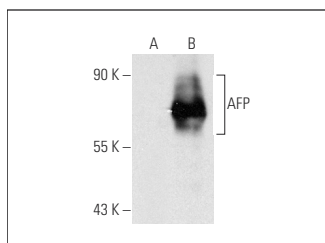
STORAGE

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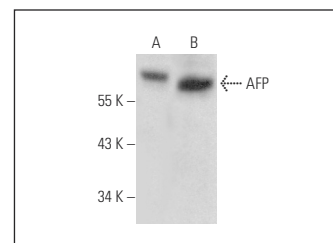
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA

AFP (H-9): sc-166335. Western blot analysis of AFP expression in non-transfected: sc-117752 (**A**) and human AFP transfected: sc-170237 (**B**) 293T whole cell lysates.

AFP (H-9): sc-166335. Western blot analysis of AFP expression in HeLa (**A**) and Hep G2 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. He, X.P., et al. 2015. Quick serological detection of a cancer biomarker with an agglutinated supramolecular glycoprobe. Anal. Chem. 87: 9078-9083.

2. Guan, X., et al. 2016. Caveolin-1 is essential in the differentiation of human adipose-derived stem cells into hepatocyte-like cells via an MAPK pathway-dependent mechanism. Mol. Med. Rep. 13: 1487-1494.

3. Erdlenbruch, F., et al. 2018. Generation of induced pluripotent stem cells (iPSCs) from human foreskin fibroblasts. Stem Cell Res. 33: 79-82.

4. Saul-McBeth, J., et al. 2019. A periplasmic antimicrobial peptide-binding protein is required for stress survival in *Vibrio cholerae*. Front. Microbiol. 10: 161.

5. Lee, S.J., et al. 2020. Generation of an induced pluripotent stem cell line KUMCi001-A from CD34+ bone marrow cells of a patient with acute lymphoblastic leukemia using human placenta-derived cell conditioned medium. Stem Cell Res. 47: 101913.

6. Kim, J.H., et al. 2021. Generation of the induced pluripotent stem cell line KUMi001-A carrying the Philadelphia chromosome from a chronic myeloid leukemia patient. Stem Cell Res. 55: 102464.

7. Kim, J.H., et al. 2022. A human pluripotent stem cell line KUMi004-A generated from a patient with chronic lymphocytic leukemia. Stem Cell Res. 60: 102668.

8. Lee, J., et al. 2022. Comparison of fucose-specific lectins to Improve quantitative AFP-L3 assay for diagnosing hepatocellular carcinoma using mass spectrometry. J. Proteome Res. 21: 1548-1557.

9. Hong, J.H., et al. 2022. Generation of a human induced pluripotent stem cell line KUMi006 from a patient with multiple myeloma. Stem Cell Res. 61: 102767.

CONJUGATES

See **AFP (C3): sc-8399** for AFP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.