

AFP (F-8): sc-166325

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.
3. Iturralde, M., et al. 1991. Effect of α -fetoprotein and albumin on the uptake of polyunsaturated fatty acids by rat hepatoma cells and fetal rat hepatocytes. *Biochim. Biophys. Acta* 1086: 81-88.

CHROMOSOMAL LOCATION

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

SOURCE

AFP (F-8) is a mouse monoclonal antibody raised against amino acids 171-310 of AFP of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AFP (F-8) 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 μ g per 100-500 μ g 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.

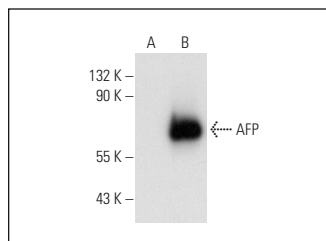
Molecular Weight of AFP: 68 kDa.

Positive Controls: AFP (h): 293T Lysate: sc-114125, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

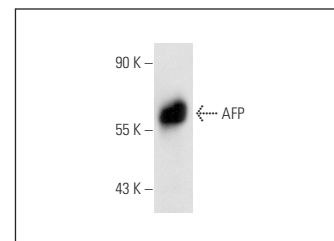
STORAGE

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

DATA



AFP (F-8): sc-166325. Western blot analysis of AFP expression in non-transfected: sc-117752 (A) and human AFP transfected: sc-114125 (B) 293T whole cell lysates.



AFP (F-8): sc-166325. Western blot analysis of AFP expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Shi, Z., et al. 2010. The neuroprotective effect of Batch-2, an aqueous extract from cat's claw (*Uncaria tomentosa*) on 6-OHDA-induced SH-SY5Y cell damage. *Prog. Biochem. Biophys.* 37: 769-778.
2. Romorini, L., et al. 2013. Effect of antibiotics against *Mycoplasma sp.* on human embryonic stem cells undifferentiated status, pluripotency, cell viability and growth. *PLoS ONE* 8: e70267.
3. Zhang, H., et al. 2014. Mechanisms controlling the smooth muscle cell death in progeria via down-regulation of poly(ADP-ribose) polymerase 1. *Proc. Natl. Acad. Sci. USA* 111: E2261-E2270.
4. Huang, X., et al. 2015. Light-activated RNA interference in human embryonic stem cells. *Biomaterials* 63: 70-79.
5. Pettinato, G., et al. 2016. Scalable differentiation of human iPSCs in a multicellular spheroid-based 3D culture into hepatocyte-like cells through direct wnt/ β -catenin pathway inhibition. *Sci. Rep.* 6: 32888.
6. Pettinato, G., et al. 2019. Generation of fully functional hepatocyte-like organoids from human induced pluripotent stem cells mixed with endothelial cells. *Sci. Rep.* 9: 8920.
7. Chen, T., et al. 2020. AFP promotes HCC progression by suppressing the HuR-mediated Fas/FADD apoptotic pathway. *Cell Death Dis.* 11: 822.
8. Isaja, L., et al. 2021. Generation of a human induced pluripotent stem cell line from a familial Alzheimer's disease PSEN1 T119I patient. *Stem Cell Res.* 53: 102325.

RESEARCH USE

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



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