## SANTA CRUZ BIOTECHNOLOGY, INC.

# AFP (C3): sc-8399



## BACKGROUND

 $\alpha$ -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.

## **CHROMOSOMAL LOCATION**

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

## SOURCE

AFP (C3) is a mouse monoclonal antibody raised against amino acids 1-609 representing full length of AFP of human origin.

#### PRODUCT

Each vial contains 200  $\mu g$  IgG\_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AFP (C3) is available conjugated to agarose (sc-8399 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8399 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8399 PE), fluorescein (sc-8399 FITC), Alexa Fluor<sup>®</sup> 488 (sc-8399 AF488), Alexa Fluor<sup>®</sup> 546 (sc-8399 AF546), Alexa Fluor<sup>®</sup> 594 (sc-8399 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-8399 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-8399 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-8399 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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#### **APPLICATIONS**

AFP (C3) is recommended for detection of AFP of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells) 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, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

## STORAGE

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

# DATA





AFP (C3): sc-8399. Western blot analysis of AFP expression in non-transfected 293T: sc-117752 (A), human AFP transfected 293T: sc-114125 (B) and Hep G2 (C) whole cell lysates.

AFP (C3): sc-8399. Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization.

#### **SELECT PRODUCT CITATIONS**

- 1. Allain, J.E., et al. 2002. Immortalization of a primate bipotent epithelial liver stem cell. Proc. Natl. Acad. Sci. USA 99: 3639-3644.
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- Mallon, B.S., et al. 2014. Comparison of the molecular profiles of human embryonic and induced pluripotent stem cells of isogenic origin. Stem Cell Res. 12: 376-386.
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- 5. Guye, P., et al. 2016. Genetically engineering self-organization of human pluripotent stem cells into a liver bud-like tissue using Gata6. Nat. Commun. 7: 10243.
- Valanejad, L., et al. 2017. FXR-Gankyrin axis is involved in development of pediatric liver cancer. Carcinogenesis 38: 738-747.
- Valanejad, L., et al. 2018. PARP1 activation increases expression of modified tumor suppressors and pathways underlying development of aggressive hepatoblastoma. Commun. Biol. 1: 67.
- 8. Qadir, M.M.F., et al. 2019. A double fail-safe approach to prevent tumorigenesis and select pancreatic  $\beta$  cells from human embryonic stem cells. Stem Cell Reports 12: 611-623.
- 9. Luo, X., et al. 2020. Selection of a clinical lead TCR targeting  $\alpha$ -fetoprotein-positive liver cancer based on a balance of risk and benefit. Front. Immunol. 11: 623.
- Wang, S., et al. 2021. Intracellular α-fetoprotein interferes with all-trans retinoic acid induced ATG7 expression and autophagy in hepatocellular carcinoma cells. Sci. Rep. 11: 2146.

#### **RESEARCH USE**

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