SANTA CRUZ BIOTECHNOLOGY, INC.

DDEF1 (P7Q): sc-81896

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DDEF1 (development and differentiation enhancing factor 1), also known as ASAP1, AMAP1 or PAG2, is an ADP ribosylation factor (ARF)-GTPase activating protein (GAP) that interacts with various signal transduction proteins. Localized to the cytoplasm and to newly formed focal complexes at the cell periphery, DDEF1 coordinates with proteins such as ARF1, ARF5, ARF6 and ZAP-70 (SRK) to influence growth and differentiation events. Through its interactions with these proteins, DDEF1 plays a key role in cell motility and regulation of Actin cytoskeletal remodeling, as well as in differentiation of adipocytes and fibroblasts. DDEF1 contains two ANK repeats, one ARF-GAP domain, one SH3 domain and one PH domain, which is essential in the phosphoinositide-dependent regulation of ARFs. Overexpression of DDEF1 is thought to block the invasion and metastasis of breast cancer and high-grade uveal melanomas, suggesting a possible role as a therapeutic target and diagnostic marker for certain cancers.

REFERENCES

1. Furman, C., et al. 2002. DEF-1/ASAP1 is a GTPase-activating protein (GAP) for ARF1 that enhances cell motility through a GAP-dependent mechanism. J. Biol. Chem. 277: 7962-7969.
2. Onodera, Y., et al. 2005. Expression of AMAP1, an ArfGAP, provides novel targets to inhibit breast cancer invasive activities. EMBO J. 24: 963-973.
3. Ehlers, J.P., et al. 2005. DDEF1 is located in an amplified region of chromosome 8q and is overexpressed in uveal melanoma. Clin. Cancer Res. 11: 3609-3613.
4. Che, M.M., et al. 2005. Regulation of ASAP1 by phospholipids is dependent on the interface between the PH and ARF GAP domains. Cell. Signal. 17: 1276-1288.
5. Luo, R., et al. 2005. Mutational analysis of the ARF1*GTP/ARF GAP interface reveals an ARF1 mutant that selectively affects the ARF GAP ASAP1. Curr. Biol. 15: 2164-2169.

CHROMOSOMAL LOCATION

Genetic locus: ASAP1 (human) mapping to 8q24.21; Asap1 (mouse) mapping to 15 D1.

SOURCE

DDEF1 (P7Q) is a mouse monoclonal antibody raised against recombinant DDEF1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

DDEF1 (P7Q) is recommended for detection of DDEF1 of mouse, rat and human 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 DDEF1 siRNA (h): sc-62196, DDEF1 siRNA (m): sc-62197, DDEF1 shRNA Plasmid (h): sc-62196-SH, DDEF1 shRNA Plasmid (m): sc-62197-SH, DDEF1 shRNA (h) Lentiviral Particles: sc-62196-V and DDEF1 shRNA (m) Lentiviral Particles: sc-62197-V.

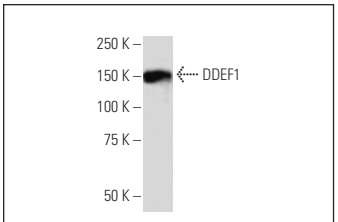
Molecular Weight of DDEF1: 125 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

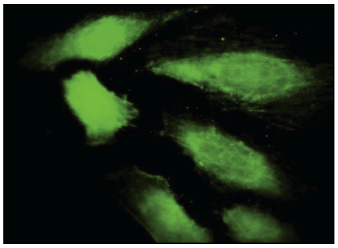
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



DDEF1 (P7Q): sc-81896. Western blot analysis of DDEF1 expression in IMR-32 whole cell lysate.



DDEF1 (P7Q): sc-81896. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Curtis, J., et al. 2015. Susceptibility to tuberculosis is associated with variants in the ASAP1 gene encoding a regulator of dendritic cell migration. Nat. Genet. 47: 523-527.
2. Chan Wah Hak, L., et al. 2018. FBP17 and CIP4 recruit SHIP2 and lamellipodin to prime the plasma membrane for fast endophilin-mediated endocytosis. Nat. Cell Biol. 20: 1023-1031.
3. Chen, S., et al. 2019. Widespread and functional RNA circularization in localized prostate cancer. Cell 176: 831-843.

RESEARCH USE

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