SANTA CRUZ BIOTECHNOLOGY, INC.

EBP1 siRNA (h): sc-77220

BACKGROUND

EBP1 (ErbB3-binding protein 1), also known as PA2G4 (proliferation-associated 2G4), p38-2G4 or HG4-1, is a member of the peptidase M24C family and functions as an RNA-binding protein involved in cellular proliferation and differentiation processes. It is expressed in a variety of cell lines, including a wide range of tumor cell lines, and localizes to the cytoplasm. Upon treatment with Neuregulin-1 (heregulin), EBP1 translocates to the nucleus. EBP1 is a component of pre-ribosomal ribonucleoprotein complexes, participating in ribosome assembly and regulating the later steps of rRNA processing. In addition, EBP1 interacts with ErbB-3 and may function as a modulator of the ErbB-3-mediated signal transduction pathway by regulating the effects of Neuregulin-1 (heregulin). EBP1 also associates with histone deacetylases (HDACs), functioning as a transcriptional co-repressor of cell cycle regulatory genes.

REFERENCES

1. Zhang, Y., et al. 2005. The ErbB3 binding protein EBP1 interacts with Sin3A to repress E2F1 and AR-mediated transcription. Nucleic Acids Res. 33: 6024-6033.
2. Squatrito, M., et al. 2006. EBP1 is a dsRNA-binding protein associated with ribosomes that modulates eIF2α phosphorylation. Biochem. Biophys. Res. Commun. 344: 859-868.
3. Bose, S.K., et al. 2006. Identification of EBP1 as a component of cytoplasmic Bcl-2 mRNP (messenger ribonucleoprotein particle) complexes. Biochem. J. 396: 99-107.
4. Akinmade, D., et al. 2007. EBP1-mediated inhibition of cell growth requires serine 363 phosphorylation. Int. J. Oncol. 31: 851-858.
5. Kowalinski, E., et al. 2007. Expression, purification, crystallization and preliminary crystallographic analysis of the proliferation-associated protein EBP1. Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun. 63: 768-770.
6. Kowalinski, E., et al. 2007. The crystal structure of EBP1 reveals a methionine aminopeptidase fold as binding platform for multiple interactions. FEBS Lett. 581: 4450-4454.
7. Santegoets, S.J., et al. 2007. Identification and characterization of ErbB3-binding protein-1 as a target for immunotherapy. J. Immunol. 179: 2005-2012.

CHROMOSOMAL LOCATION

Genetic locus: PA2G4 (human) mapping to 12q13.2.

PRODUCT

EBP1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EBP1 shRNA Plasmid (h): sc-77220-SH and EBP1 shRNA (h) Lentiviral Particles: sc-77220-V as alternate gene silencing products.

For independent verification of EBP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77220A, sc-77220B and sc-77220C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

EBP1 siRNA (h) is recommended for the inhibition of EBP1 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

EBP1 (C-11): sc-393114 is recommended as a control antibody for monitoring of EBP1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EBP1 gene expression knockdown using RT-PCR Primer: EBP1 (h)-PR: sc-77220-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jeong, S., et al. 2022. AF8c, a multi-kinase inhibitor induces apoptosis by activating DR5/Nrf2 via ROS in colorectal cancer cells. Cancers 14: 3043.

RESEARCH USE

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