SANTA CRUZ BIOTECHNOLOGY, INC.

EMBP siRNA (h): sc-44577

BACKGROUND

The eosinophil major basic protein (EMBP), also designated MBP, PRG2, proteoglycan 2, BMPG, or bone marrow natural killer cell activator, is a constituent of the crystalline core of the eosinophil granule. High levels of the pro-EMBP are present in placenta and pregnancy serum, where it exists as a complex with several other proteins including pregnancy-associated plasma protein A (PAPPA), angiotensinogen (AGT) and C3dg. EMBP may influence antiparasitic defense mechanisms as a cytotoxin and helminthotoxin, and may play a role in immune hypersensitivity reactions. EMBP stimulates an Src kinase-dependent activation of class I (A) phosphoinositide 3-kinase and, in turn, activation of protein kinase C ζ in neutrophils. EMBP transcription is under regulation by novel combinatorial interactions of GATA-1, PU.1, and C/EBPε isoforms.

REFERENCES

1. Oxvig, C., et al. 1993. Circulating human pregnancy-associated plasma protein-A is disulfide-bridged to the proform of eosinophil major basic protein. J. Biol. Chem. 268: 12243-12246.
2. Popken-Harris, P., et al. 1995. Expression, purification, and characterization of the recombinant proform of eosinophil granule major basic protein. J. Immunol. 155: 1472-1480.
3. Larson, K.A., et al. 1995. The identification and cloning of a murine major basic protein gene expressed in eosinophils. J. Immunol. 155: 3002-3012.
4. Li, M.S., et al. 1995. Human eosinophil major basic protein, a mediator of allergic inflammation, is expressed by alternative splicing from two promoters. Biochem. J. 305: 921-927.
5. Mujtaba, M.G., et al. 1997. CD4 T suppressor cells mediate interferon τ protection against experimental allergic encephalomyelitis. J. Neuroimmunol. 75: 35-42.
6. Mukai, H.Y., et al. 1997. Elevated serum levels of eosinophil major basic protein in patients with myeloproliferative disorders without eosinophilia. Int. J. Hematol. 66: 197-202.
7. Yamaguchi, Y., et al. 1999. C/EBPβ and GATA-1 synergistically regulate activity of the eosinophil granule major basic protein promoter: implication for C/EBPβ activity in eosinophil gene expression. Blood 94: 1429-1439.

CHROMOSOMAL LOCATION

Genetic locus: PRG2 (human) mapping to 11q12.1.

PRODUCT

EMBP 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 EMBP shRNA Plasmid (h): sc-44577-SH and EMBP shRNA (h) Lentiviral Particles: sc-44577-V as alternate gene silencing products.

For independent verification of EMBP (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-44577A, sc-44577B and sc-44577C.

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

EMBP siRNA (h) is recommended for the inhibition of EMBP 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

EMBP (BMK13): sc-59164 is recommended as a control antibody for monitoring of EMBP 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 EMBP gene expression knockdown using RT-PCR Primer: EMBP (h)-PR: sc-44577-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.