SANTA CRUZ BIOTECHNOLOGY, INC.

Emp siRNA (h): sc-89290

BACKGROUND

Emp (erythroblast macrophage protein), also known as macrophage erythroblast attacher or human lung cancer oncogene 10 protein, is a 396 amino acid ubiquitously expressed adhesion protein. Expressed as five alternatively spliced isoforms, Emp contains one CTLH domain and one LisH domain. Emp can form a complex with F-Actin, which is involved regulating Actin distribution in erythroblasts and macrophages. Considered to assist with cell division and nuclear architecture, Emp is localized with condensed chromatin at prophase, nuclear spindle poles at metaphase and in the contractile ring during telophase and cytokinesis. Although the exact function of Emp is unknown, Emp is suggested to be involvement in erythroblast-macrophage cell attachment, terminal maturation and enucleation of erythroid cells, and inhibiting apoptosis of erythroblasts.

REFERENCES

1. Hanspal, M., Smockova, Y. and Uong, Q. 1998. Molecular identification and functional characterization of a novel protein that mediates the attachment of erythroblasts to macrophages. Blood 92: 2940-2950.
2. Ota, T., Suzuki, Y., Nishikawa, T., Otsuki, T., Sugiyama, T., Irie, R., Wakamatsu, A., Hayashi, K., Sato, H., Nagai, K., Kimura, K., Makita, H., Sekine, M., Obayashi, M., Nishi, T., Shibahara, T., Tanaka, T., et al. 2004. Complete sequencing and characterization of 21,243 full-length human cDNAs. Nat. Genet. 36: 40-45.
3. Gerhard, D.S., Wagner, L., Feingold, E.A., Shenmen, C.M., Grouse, L.H., Schuler, G., Klein, S.L., Old, S., Rasooly, R., Good, P., Guyer, M., Peck, A.M., Derge, J.G., Lipman, D., Collins, F.S., Jang, W., Sherry, S., et al. 2004. The status, quality, and expansion of the NIH full-length cDNA project: the Mammalian Gene Collection (MGC). Genome Res. 14: 2121-2127.
4. Bala, S., Kumar, A., Soni, S., Sinha, S. and Hanspal, M. 2006. Emp is a component of the nuclear matrix of mammalian cells and undergoes dynamic rearrangements during cell division. Biochem. Biophys. Res. Commun. 342: 1040-1048.
5. Soni, S., Bala, S., Gwynn, B., Sahr, K.E., Peters, L.L. and Hanspal, M. 2006. Absence of erythroblast macrophage protein (Emp) leads to failure of erythroblast nuclear extrusion. J. Biol. Chem. 281: 20181-20189.

CHROMOSOMAL LOCATION

Genetic locus: MAEA (human) mapping to 4p16.3.

PRODUCT

Emp siRNA (h) is a pool of 2 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 Emp shRNA Plasmid (h): sc-89290-SH and Emp shRNA (h) Lentiviral Particles: sc-89290-V as alternate gene silencing products.

For independent verification of Emp (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-89290A and sc-89290B.

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

Emp siRNA (h) is recommended for the inhibition of Emp 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Emp gene expression knockdown using RT-PCR Primer: Emp (h)-PR: sc-89290-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.