SANTA CRUZ BIOTECHNOLOGY, INC.

CD177 siRNA (h): sc-105189

BACKGROUND

Patients with polycythemia vera (PV), a neoplastic stem cell disorder that leads to excessive production of all myeloid cell lines, overexpress the cell surface antigen CD177, also designated NB1. The increased output, especially of red blood cells, increases whole blood viscosity and causes vascular occlusion and ischemia. Because of the marked upregulation of CD177 in PV patients, as compared to healthy individuals or those with other erythrocytosis-related conditions, analysis of this protein presents a useful tool for diagnosis and research into the mechanisms of PV.

REFERENCES

1. Tefferi, A. 2003. Polycythemia vera: a comprehensive review and clinical recommendations. Mayo Clin. Proc. 78: 174-194.
2. Klippel, S., et al. 2003. Quantification of PRV-1 mRNA distinguishes polycythemia vera from secondary erythrocytosis. Blood 102: 3569-3574.
3. Dittmar, K., et al. 2003. Assessment of the relative number of copies of the gene encoding human neutrophil antigen-2a(HNA-2a), CD177, and a homologous pseudogene by quantitative real-time PCR. Immunohematology 19: 122-126.
4. Caruccio, L., et al. 2004. CD177 polymorphisms: correlation between high-frequency single nucleotide polymorphisms and neutrophil surface protein expression. Transfusion 44: 77-82.
5. Gohring, K., et al. 2004. Neutrophil CD177 (NB1 gp, HNA-2a) expression is increased in severe bacterial infections and polycythaemia vera. Br. J. Haematol. 126: 252-254.
6. Passamonti, F., et al. 2004. Clinical significance of neutrophil CD177 mRNA expression in Ph-negative chronic myeloproliferative disorders. Br. J. Haematol. 126: 650-656.

CHROMOSOMAL LOCATION

Genetic locus: CD177 (human) mapping to 19q13.31.

PRODUCT

CD177 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 CD177 shRNA Plasmid (h): sc-105189-SH and CD177 shRNA (h) Lentiviral Particles: sc-105189-V as alternate gene silencing products.

For independent verification of CD177 (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-105189A, sc-105189B and sc-105189C.

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.

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

CD177 siRNA (h) is recommended for the inhibition of CD177 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

CD177 (C-1): sc-374291 is recommended as a control antibody for monitoring of CD177 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 CD177 gene expression knockdown using RT-PCR Primer: CD177 (h)-PR: sc-105189-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.