**BACKGROUND**

Hemogen (Hemopoietic gene protein, Erythroid differentiation-associated gene protein) is a 484 amino acid protein encoded by the human gene HEMGN. Hemogen is a nuclear protein that is expressed in hematopoietic precursor cells and can be detected in CD34+ and K-562 leukemia cell line. It is also expressed in bone marrow, testis, thymus and thyroid tumors, non-Hodgkin lymphoma, various leukemia cell lines, peripheral blood mononuclear cells (PBMCs) and bone marrow mononuclear cells (BMMCs) of patients with leukemia. Hemogen is down-regulated during megakaryocytic differentiation of K-562 cells by 12-O-tetradecanoylphorbol-13-acetate (TPA) (at protein level). It can be up-regulated in normal PBMCs by mitogens.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: Hemgn (mouse) mapping to 4 B1.

**PRODUCT**

Hemogen shRNA Plasmid (m) is a pool of 3 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see Hemogen siRNA (m): sc-61860 and Hemogen shRNA (m) Lentiviral Particles: sc-61860-V as alternate gene silencing products.

**STORAGE AND RESUSPENSION**

Store lyophilized shRNA plasmid DNA at 4°C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4°C for short term storage or -80°C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

**APPLICATIONS**

Hemogen shRNA Plasmid (m) is recommended for the inhibition of Hemogen expression in mouse cells.

**SUPPORT REAGENTS**

For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology's shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

**GENE EXPRESSION MONITORING**

Hemogen (G-2): sc-377438 is recommended as a control antibody for monitoring of Hemogen 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-IgG® BP-HRP: sc-516102 or m-IgG® 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-108061. 2) Immunofluorescence: use m-IgG® BP-RTIC: sc-516140 or m-IgG® BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-29481 or UltraCruz® Hard-set Mounting Medium: sc-359850.

**RT-PCR REAGENTS**

Semi-quantitative RT-PCR may be performed to monitor Hemogen gene expression knockdown using RT-PCR Primer: Hemogen (m)-PR: sc-61860-PR (20 µl). Annealing temperature for the primers should be 55-60°C and the extension temperature should be 68-72°C.

**PROTOCOLS**

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