SANTA CRUZ BIOTECHNOLOGY, INC.

H60b siRNA (m): sc-145883

BACKGROUND

Natural killer (NK) cells attack tumor and infected cells, but the receptors and ligands that stimulate them are poorly understood. Two murine ligands for the lectin-like receptor NKG2D, H60 and retinoic acid early inducible (Rae-1), are distant relatives of major histocompatibility complex class I molecules. These molecules are encoded by Rae-1 and H60 minor histocompatibility antigen genes on mouse chromosome 10 and show weak homology with MHC class I. Expression of the NKG2D ligands is low or absent on normal, adult tissues; however, they are constitutively expressed on some tumors and upregulated by retinoic acid. Ectopic expression of Rae-1 and H60 confers target susceptibility to NK cell attack. NKG2D binds to H60 with approximately 25-fold higher affinity than to Rae-1. Rae-1 and H60 compete directly for occupancy of NKG2D, and, thus, NKG2D can be occupied by only one ligand at a time. Additionally, Rae-1 and H60 ligands of the NKG2D receptor stimulate tumor immunity.

REFERENCES

1. Diefenbach, A., Jamieson, A.M., Liu, S.D., Shastri, N. and Raulet, D.H. 2000. Ligands for the murine NKG2D receptor: expression by tumor cells and activation of NK cells and macrophages. Nat. Immunol. 1: 119-126.
2. Cerwenka, A., Bakker, A.B., McClanahan, T., Wagner, J., Wu, J., Phillips, J.H. and Lanier, L.L. 2000. Retinoic acid early inducible genes define a ligand family for the activating NKG2D receptor in mice. Immunity 12: 721-727.
3. O'Callaghan, C.A., Cerwenka, A., Willcox, B.E., Lanier, L.L. and Bjorkman, P.J. 2001. Molecular competition for NKG2D: H60 and RAE1 compete unequally for NKG2D with dominance of H60. Immunity 15: 201-211.
4. Carayannopoulos, L.N., Naidenko, O.V., Kinder, J., Ho, E.L., Fremont, D.H. and Yokoyama, W.M. 2002. Ligands for murine NKG2D display heterogeneous binding behavior. Eur. J. Immunol. 32: 597-605.
5. Diefenbach, A., Jensen, E.R., Jamieson, A.M., and Raulet, D.H. 2001. Rae1 and H60 ligands of the NKG2D receptor stimulate tumour immunity. Nature 413: 165-171.

CHROMOSOMAL LOCATION

Genetic locus: H60b (mouse) mapping to 10 A3.

PRODUCT

H60b siRNA (m) 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 H60b shRNA Plasmid (m): sc-145883-SH and H60b shRNA (m) Lentiviral Particles: sc-145883-V as alternate gene silencing products.

For independent verification of H60b (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-145883A and sc-145883B.

RESEARCH USE

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

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

H60b siRNA (m) is recommended for the inhibition of H60b expression in mouse 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 H60b gene expression knockdown using RT-PCR Primer: H60b (m)-PR: sc-145883-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 or our catalog for detailed protocols and support products.