SANTA CRUZ BIOTECHNOLOGY, INC.

H2-Aa siRNA (m): sc-145849

BACKGROUND

H2-Aa (histocompatibility 2, class II antigen A, α) belongs to the MHC class II family. Major histocompatibility complex (MHC) molecules, also designated human leukocyte antigen (HLA) molecules, are cell-surface receptors that bind foreign peptides and present them to T lymphocytes. MHC class II molecules are encoded by polymorphic MHC genes and consist of a non-covalent complex of an α and β chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM and -DO molecules regulate binding of exogenous peptides to class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. There are seven different chain sequences for H2-Aa, referred to as the A-B, A-F, A-K, A-Q, A-R, A-S and A-U α chains. The H2-Aa gene is conserved in human, chimpanzee, Rhesus monkey, bovine, and rat.

REFERENCES

1. Murphy, D.B., et al. 1989. A novel MHC class II epitope expressed in thymic medulla but not cortex. Nature 338: 765-768.
2. Little, A.M., et al. 1999. Polymorphism and evolution of HLA class I and II genes and molecules. Rev. Immunogenet. 1: 105-123.
3. Van Kaer, L. 2001. Accessory proteins that control the assembly of MHC molecules with peptides. Immunol. Res. 23: 205-214.
4. Zaliauskiene, L., et al. 2002. Enhancement of MHC class II-restricted responses by receptor-mediated uptake of peptide antigens. J. Immunol. 169: 2337-2345.
5. Fukui, T., et al. 2006. Gastric mucosal hyperplasia via upregulation of gastrin induced by persistent activation of gastric innate immunity in major histocompatibility complex class II deficient mice. Gut 55: 607-615.
6. Bochtler, P., et al. 2006. Functional adaptive CD4 Foxp3 T cells develop in MHC class II-deficient mice. J. Immunol. 177: 8307-8314.
7. Knapp, B., et al. 2010. A comparative approach linking molecular dynamics of altered peptide ligands and MHC with *in vivo* immune responses. PLoS ONE 5: e11653.

CHROMOSOMAL LOCATION

Genetic locus: H2-Aa (mouse) mapping to 17 B1.

PRODUCT

H2-Aa siRNA (m) is a target-specific 19-25 nt siRNA 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 H2-Aa shRNA Plasmid (m): sc-145849-SH and H2-Aa shRNA (m) Lentiviral Particles: sc-145849-V as alternate gene silencing products.

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

H2-Aa siRNA (m) is recommended for the inhibition of H2-Aa 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 H2-Aa gene expression knockdown using RT-PCR Primer: H2-Aa (m)-PR: sc-145849-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.