SANTA CRUZ BIOTECHNOLOGY, INC.

ERAP2 siRNA (h): sc-91852

BACKGROUND

ERAP2 (Endoplasmic reticulum aminopeptidase 2), also known as Leukocyte-derived arginine aminopeptidase, is a 960 amino acid single-pass transmembrane protein on the surface of the endoplasmic reticulum that functions as a hetereodimer with ERAP1 to play a central role in peptide trimming, an essential step for the generation of most HLA class I-binding peptides. This form of protein modification is crucial to cleave long precursor peptides in order to fit them to the correct length as required for presentation of MHC class-I molecules on the cell surface. Widely expressed with highest levels in spleen and leukocytes, ERAP2 preferentially hydrolyzes arginine and lysine and requires zinc as a cofactor. Defects in the gene encoding ERAP2 may result in improper antigen processing, which could lead to tumor evasion from immune surveillance.

REFERENCES

1. Saveanu, L., et al. 2002. Beyond the proteasome: trimming, degradation and generation of MHC class I ligands by auxiliary proteases. Mol. Immunol. 39: 203-215.
2. Tanioka, T., et al. 2003. Human leukocyte-derived arginine aminopeptidase. The third member of the oxytocinase subfamily of aminopeptidases. J. Biol. Chem. 278: 32275-32283.
3. Saveanu, L., et al. 2005. Complexity, contradictions, and conundrums: studying post-proteasomal proteolysis in HLA class I antigen presentation. Immunol. Rev. 207: 42-59.
4. Saveanu, L., et al. 2005. Concerted peptide trimming by human ERAP1 and ERAP2 aminopeptidase complexes in the endoplasmic reticulum. Nat. Immunol. 6: 689-697.
5. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609497. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Fruci, D., et al. 2006. Expression of endoplasmic reticulum aminopeptidases in EBV-B cell lines from healthy donors and in leukemia/lymphoma, carcinoma, and melanoma cell lines. J. Immunol. 176: 4869-4879.

CHROMOSOMAL LOCATION

Genetic locus: ERAP2 (human) mapping to 5q15.

PRODUCT

ERAP2 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 ERAP2 shRNA Plasmid (h): sc-91852-SH and ERAP2 shRNA (h) Lentiviral Particles: sc-91852-V as alternate gene silencing products.

For independent verification of ERAP2 (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-91852A, sc-91852B and sc-91852C.

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

ERAP2 siRNA (h) is recommended for the inhibition of ERAP2 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 ERAP2 gene expression knockdown using RT-PCR Primer: ERAP2 (h)-PR: sc-91852-PR (20 µl, 598 bp). 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.