

# IL-20R $\alpha$ siRNA (h): sc-45237

## BACKGROUND

The class II cytokine receptor family includes 12 members, 11 of which combine as various heterodimers to transduce signals across the cellular membrane for 27 cytokines. These cytokines are divided into 4 structurally related groups: 6 cytokines of the IL-10 family, 17 type I IFNs, one type II IFN and 3 IFN- $\lambda$ . IL-20 is a member of the IL-10 family of cytokines that has been shown to be upregulated in psoriatic skin. The receptor for IL-20 (IL-20R) exists as a dimer consisting of IL-20R $\alpha$  and IL-20R $\beta$ . IL-20R also functions as a receptor for IL-19, IL-24 and IL-26. It is highly expressed in skin, brain and testis. IL-20, IL20R $\alpha$  and IL-20R $\beta$  all have higher expression levels in psoriatic lesional (LS) skin than in nonlesional (NL) skin, suggesting a role for these proteins as potential therapeutic targets. IL-20 can induce signal transducer and activator of transcription (Stat) activation through IL-20R.

## REFERENCES

- Dumoutier, L., Lejeune, D., Colau, D. and Renauld, J.C. 2001. Cloning and characterization of IL-22 binding protein, a natural antagonist of IL-10-related T cell-derived inducible factor/IL-22. *J. Immunol.* 166: 7090-7095.
- Dumoutier, L., Leemans, C., Lejeune, D., Kotenko, S.V. and Renauld, J.C. 2001. Cutting edge: Stat activation by IL-19, IL-20 and MDA-7 through IL-20 receptor complexes of two types. *J. Immunol.* 167: 3545-3549.
- Kotenko, S.V. and Langer, J.A. 2004. Full house: 12 receptors for 27 cytokines. *Int. Immunopharmacol.* 4: 593-608.
- Chada, S., Mhashilkar, A.M., Ramesh, R., Mumm, J.B., Sutton, R.B., Bocangel, D., Zheng, M., Grimm, E.A. and Ekmekcioglu, S. 2004. Bystander activity of Ad-mda7: human MDA-7 protein kills melanoma via an IL-20 receptor-dependent but Stat3-independent mechanism. *Mol. Ther.* 10: 1085-1095.
- Langer, J.A., Cutrone, E.C. and Kotenko, S. 2004. The class II cytokine receptor (CRF-2) family: overview and patterns of receptor-ligand interactions. *Cytokine Growth Factor Rev.* 15: 33-48.
- Wang, F., Lee, E., Lowes, M.A., Haider, A.S., Fuentes-Duculan, J., Abello, M.V., Chamian, F., Cardinale, I. and Krueger, J.G. 2006. Prominent production of IL-20 by CD68<sup>+</sup>/CD11c<sup>+</sup> myeloid-derived cells in psoriasis: gene regulation and cellular effects. *J. Invest. Dermatol.* 126: 1590-1599.

## CHROMOSOMAL LOCATION

Genetic locus: IL20RA (human) mapping to 6q23.3.

## PRODUCT

IL-20R $\alpha$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IL-20R $\alpha$  shRNA Plasmid (h): sc-45237-SH and IL-20R $\alpha$  shRNA (h) Lentiviral Particles: sc-45237-V as alternate gene silencing products.

For independent verification of IL-20R $\alpha$  (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-45237A, sc-45237B and sc-45237C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

IL-20R $\alpha$  siRNA (h) is recommended for the inhibition of IL-20R $\alpha$  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  $\mu$ M in 66  $\mu$ l. 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

IL-20R $\alpha$  (EE09): sc-80065 is recommended as a control antibody for monitoring of IL-20R $\alpha$  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).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IL-20R $\alpha$  gene expression knockdown using RT-PCR Primer: IL-20R $\alpha$  (h)-PR: sc-45237-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.