

# ISG20 siRNA (h): sc-45248

## BACKGROUND

Interferon-stimulated gene (ISG20) protein is a 3' to 5' exonuclease that specifically targets single-stranded RNA for degradation. Located in promyelocytic leukemia (PML) nuclear bodies, ISG20 is present in peripheral blood leukocytes, spleen, thymus, colon and lung tissues. Constitutive expression of ISG20 confers resistance to vesicular stomatitis virus (VSV), influenza virus, and encephalomyocarditis virus (EMCV). In addition to providing antiviral protection, ISG20 may mediate estrogen influence on cellular proliferation and differentiation.

## REFERENCES

1. Pentecost, B.T. 1998. Expression and estrogen regulation of the HEM45 mRNA in human tumor lines and in the rat uterus. *J. Steroid Biochem. Mol. Biol.* 64: 25-33.
2. Nguyen, L.H. 2001. The human interferon- and estrogen-regulated ISG20/HEM45 gene product degrades single-stranded RNA and DNA *in vitro*. *Biochemistry* 40: 7174-7179.
3. Espert, L. 2003. ISG20, a new interferon-induced RNase specific for single-stranded RNA, defines an alternative antiviral pathway against RNA genomic viruses. *J. Biol. Chem.* 278: 16151-16158.
4. Espert, L. 2004. The exonuclease ISG20 is directly induced by synthetic dsRNA via NFκB and IRF-1 activation. *Oncogene* 23: 4636-4640.
5. Espert, L. 2005. Interferon-induced exonuclease ISG20 exhibits an antiviral activity against human immunodeficiency virus type I. *J. Gen. Virol.* 86: 2221-2229.

## CHROMOSOMAL LOCATION

Genetic locus: ISG20 (human) mapping to 15q26.1.

## PRODUCT

ISG20 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 ISG20 shRNA Plasmid (h): sc-45248-SH and ISG20 shRNA (h) Lentiviral Particles: sc-45248-V as alternate gene silencing products.

For independent verification of ISG20 (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-45248A, sc-45248B and sc-45248C.

## 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

ISG20 siRNA (h) is recommended for the inhibition of ISG20 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.

## GENE EXPRESSION MONITORING

ISG20 (D-5): sc-376665 is recommended as a control antibody for monitoring of ISG20 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ISG20 gene expression knockdown using RT-PCR Primer: ISG20 (h)-PR: sc-45248-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Liu, Y., et al. 2017. Interferon-inducible ribonuclease ISG20 inhibits hepatitis B virus replication through directly binding to the epsilon stem-loop structure of viral RNA. *PLoS Pathog.* 13: e1006296.

## 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.