

survivin siRNA (h): sc-29499

BACKGROUND

The baculovirus protein p35 inhibits virally-induced apoptosis of invertebrate and mammalian cells and may function to impair the clearing of virally infected cells by the immune system of the host. This is accomplished at least in part by the ability of p35 to block both TNF- and Fas-mediated apoptosis through the inhibition of the ICE family of serine proteases. Two mammalian homologs of baculovirus p35, referred to as inhibitor of apoptosis protein (IAP) 1 and 2, share an amino-terminal baculovirus IAP repeat (BIR) motif and a carboxy-terminal RING finger. Although the c-IAPs do not directly associate with the TNF receptor (TNF-R), they efficiently block TNF-mediated apoptosis through their interaction with the downstream TNF-R effectors, TRAF1 and TRAF2. Additional IAP family members include ILP (for IAP-like protein) and survivin. ILP inhibits activated caspase-3, leading to the resistance of Fas-mediated apoptosis. Survivin (also designated TIAP) is expressed during the G₂/M phase of the cell cycle and associates with microtubules of the mitotic spindle. Increased caspase-3 activity is detected when a disruption of survivin-microtubule interactions occurs.

REFERENCES

1. Hay, B.A., et al. 1994. Expression of baculovirus p35 prevents cell death in *Drosophila*. *Development* 120: 2121-2129.
2. Beidler, D.R., et al. 1995. The baculovirus p35 protein inhibits Fas- and tumor necrosis factor-induced apoptosis. *J. Biol. Chem.* 270: 16526-16528.
3. Rothe, M., et al. 1995. The TNF-R2-TRAF signaling complex contains two novel proteins related to baculoviral inhibitor of apoptosis proteins. *Cell* 83: 1243-1252.

CHROMOSOMAL LOCATION

Genetic locus: BIRC5 (human) mapping to 17q25.3.

PRODUCT

survivin siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see survivin shRNA Plasmid (h): sc-29499-SH and survivin shRNA (h) Lentiviral Particles: sc-29499-V as alternate gene silencing 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

survivin siRNA (h) is recommended for the inhibition of survivin 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 μ M in 66 μ 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.

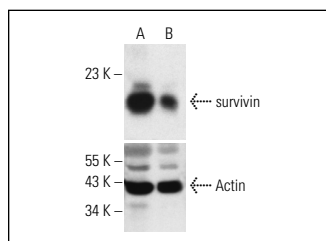
GENE EXPRESSION MONITORING

survivin (D-8): sc-17779 is recommended as a control antibody for monitoring of survivin 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 survivin gene expression knockdown using RT-PCR Primer: survivin (h)-PR: sc-29499-PR (20 μ l, 434 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



survivin siRNA (h): sc-29499. Western blot analysis of survivin expression in non-transfected control (A) and survivin siRNA transfected (B) HeLa cells. Blot probed with survivin (D-8): sc-17779. Actin (I-19): sc-1616 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Rahman, K.W., et al. 2006. Gene expression profiling revealed survivin as a target of 3,3'-diindolylmethane-induced cell growth inhibition and apoptosis in breast cancer cells. *Cancer Res.* 66: 4952-4960.
2. Hwang, J.S., et al. 2015. Shogaol overcomes TRAIL resistance in colon cancer cells via inhibiting of survivin. *Tumour Biol.* 36: 8819-8829.
3. Siddharth, S., et al. 2016. Survivin as a marker for quiescent-breast cancer stem cells-an intermediate, adherent, pre-requisite phase of breast cancer metastasis. *Clin. Exp. Metastasis* 33: 661-675.

RESEARCH USE

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