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# caspase-4/5 p10 siRNA (h): sc-43668

## BACKGROUND

Caspases are cysteine proteases which play important roles in the activation of cytokines and in apoptosis. The ICE subfamily of caspases comprises peptides closely related to caspase-1, which promotes maturation of interleukin 1 $\beta$  (IL-1 $\beta$ ) and interleukin-18 (IL-18) by proteolytic cleavage of precursor forms to generate biologically active peptides. Both caspase-4 and caspase-5 are members of the caspase-1 subfamily, and are more closely related to each other than to other homologs. Caspase-5 (also designated ICErel-III, TY, ICH-3 and caspase-12 in mouse), can cleave its own precursor, an activity that requires the Cysteine 245 residue. The human caspase-5 gene maps to chromosome 11q22.3 and encodes a protein whose expression is barely detectable in most tissues except brain. Caspase-4 cleaves caspase-1 and has two subunits derived from the precursor sequence by an autocatalytic mechanism or by cleavage by caspase-8. Caspase-4 is widely expressed, with highest levels in spleen and lung, and is not found in the brain.

## REFERENCES

1. Munday, N.A., et al. 1995. Molecular cloning and pro-apoptotic activity of ICErelIII and ICErelIII, members of the ICE/CED-3 family of cysteine proteases. *J. Biol. Chem.* 270: 15870-15876.
2. Faucheu, C., et al. 1996. Identification of a cysteine protease closely related to interleukin-1 $\beta$ -converting enzyme. *J. Biochem.* 236: 207-213.
3. Cohen, G.M. 1997. Caspases: the executioners of apoptosis. *Biochem. J.* 326: 1-16.
4. Van de Craen, M., et al. 1997. Characterization of seven murine caspase family members. *FEBS Lett.* 403: 61-69.
5. Schwartz, S., Jr., et al. 1999. Frameshift mutations at mononucleotide repeats in caspase-5 and other target genes in endometrial and gastrointestinal cancer of the microsatellite mutator phenotype. *Cancer Res.* 59: 2995-3002.
6. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 602665. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

## CHROMOSOMAL LOCATION

Genetic locus: CASP5 (human) mapping to 11q22.3.

## PRODUCT

caspase-4/5 p10 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 caspase-4/5 p10 shRNA Plasmid (h): sc-43668-SH and caspase-4/5 p10 shRNA (h) Lentiviral Particles: sc-43668-V as alternate gene silencing products.

For independent verification of caspase-4/5 p10 (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-43668A, sc-43668B and sc-43668C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$  C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$  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

caspase-4/5 p10 siRNA (h) is recommended for the inhibition of caspase-4/5 p10 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

caspase-5 p20 (H-2): sc-393346 is recommended as a control antibody for monitoring of caspase-4/5 p10 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor caspase-4/5 p10 gene expression knockdown using RT-PCR Primer: caspase-4/5 p10 (h)-PR: sc-43668-PR (20  $\mu$ l, 433 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  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.