SANTA CRUZ BIOTECHNOLOGY, INC.

# Ang-4 siRNA (m): sc-39310

## BACKGROUND

Angiopoietin-1 (Ang-1) is a secreted ligand for Tie-2, a cell surface receptor tyrosine kinase expressed in endothelial and hemopoietic cells. Ang-1 is an angiogenic factor that mediates blood vessel maturation and may be involved in endothelial development. A related protein, angiopoietin-2 (Ang-2), is a naturally occurring antagonist of Ang-1 activation of Tie-2. In adult tissue, Ang-2 expression is restricted to sites of vascular remodeling. Ang-3 and Ang-4 represent the mouse and human counterparts of the same gene locus. The structural divergence of Ang-3 and Ang-4 cause their divergent functions. Ang-3 and Ang-4 have very different distributions in their respective species, and Ang-3 appears to act as an antagonist while Ang-4 appears to function as an agonist. Ang-3 and Ang-4 share all the main structural characteristics of Ang-1 and Ang-2 and are homologous throughout the signal peptide, N-terminal region, coiled-coil segment and Fibrinogen-like domain.

## REFERENCES


1. Dumont, D.J., et al. 1992. Tek, a novel tyrosine kinase gene located on mouse chromosome 4, is expressed in endothelial cells and their presumptive precursors. Oncogene 7: 1471-1480.
2. Sato, T.N., et al. 1993. Tie-1 and Tie-2 define another class of putative receptor tyrosine kinase genes expressed in early embryonic vascular system. Proc. Natl. Acad. Sci. USA 90: 9355-9358.
3. Dumont, D.J., et al. 1993. The endothelial-specific receptor tyrosine kinase, Tek, is a member of a new subfamily of receptors. Oncogene 8: 1293-1301.
4. Davis, S., et al. 1996. Isolation of angiopoietin-1, a ligand for the Tie-2 receptor, by secretion-trap expression cloning. Cell 87: 1161-1169.
5. Maisonpierre, P.C., et al. 1997. Angiopoietin-2, a natural antagonist for Tie-2 that disrupts *in vivo* angiogenesis. Science 277: 55-60.
6. Kim, I., et al. 1999. Molecular cloning and characterization of a novel angiopoietin family protein, angiopoietin-3. FEBS Lett. 443: 353-356.
7. Valenzuela, D.M., et al. 1999. Angiopoietins 3 and 4: diverging gene counterparts in mice and humans. Proc. Natl. Acad. Sci. USA 96: 1904-1909.
8. Tse, V., et al. 2003. The temporal-spatial expression of VEGF, angiopoietins-1 and 2, and Tie-2 during tumor angiogenesis and their functional correlation with tumor neovascular architecture. Neurol. Res. 7: 729-738.


## CHROMOSOMAL LOCATION

Genetic locus: Angpt4 (mouse) mapping to 2 G3.

## PRODUCT

Ang-4 siRNA (m) 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 Ang-4 shRNA Plasmid (m): sc-39310-SH and Ang-4 shRNA (m) Lentiviral Particles: sc-39310-V as alternate gene silencing products.

For independent verification of Ang-4 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39310A, sc-39310B and sc-39310C.

## 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

Ang-4 siRNA (m) is recommended for the inhibition of Ang-4 expression in mouse 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

Ang-4 (A-6): sc-377497 is recommended as a control antibody for monitoring of Ang-4 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 Ang-4 gene expression knockdown using RT-PCR Primer: Ang-4 (m)-PR: sc-39310-PR (20 µl). 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.