

# Adducin $\beta$ siRNA (m): sc-37061

## BACKGROUND

Adducins are a family of cytoskeleton proteins encoded by three genes ( $\alpha$ ,  $\beta$ ,  $\gamma$ ). Adducin is a protein associated with the inner leaflet of the plasma membrane and is one of the proteins localized at the spectrin-Actin junction of the membrane skeleton. The cortical Actin cytoskeletal network is lost during apoptosis and Adducins are central in the cortical Actin network organization.  $\alpha$ -Adducin is a cytoskeletal protein involved with sodium-pump activity in the renal tubule and is associated with hypertension. The expression of  $\alpha$ - and  $\gamma$ -Adducins is ubiquitous in contrast to the restricted expression of  $\beta$ -Adducin.  $\beta$ -Adducin is expressed at high levels in brain and hematopoietic tissues, such as bone marrow in humans, and spleen in mice.

## REFERENCES

1. Chapline, C., et al. 1993. Interaction cloning of protein kinase C substrates. *J. Biol. Chem.* 268: 6858-6861.
2. Burns, M.E., et al. 1998. Rabphilin-3A: a multifunctional regulator of synaptic vesicle traffic. *J. Gen. Physiol.* 111: 243-255.
3. Busjahn, A., et al. 1999. Linkage but lack of association for blood pressure and the  $\alpha$ -Adducin locus in normotensive twins. *J. Hypertens.* 17: 1437-1441.
4. Gilligan, D.M., et al. 1999. Targeted disruption of the  $\beta$  Adducin gene (Add2) causes red blood cell spherocytosis in mice. *Proc. Natl. Acad. Sci. USA* 96: 10717-10722.
5. Muro, A.F., et al. 2000. Mild spherocytic hereditary elliptocytosis and altered levels of  $\alpha$ - and  $\gamma$ -Adducins in  $\beta$ -Adducin-deficient mice. *Blood* 95: 3978-3985.

## CHROMOSOMAL LOCATION

Genetic locus: Add2 (mouse) mapping to 6 D1.

## PRODUCT

Adducin  $\beta$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Adducin  $\beta$  shRNA Plasmid (m): sc-37061-SH and Adducin  $\beta$  shRNA (m) Lentiviral Particles: sc-37061-V as alternate gene silencing products.

For independent verification of Adducin  $\beta$  (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-37061A, sc-37061B and sc-37061C.

## 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

Adducin  $\beta$  siRNA (m) is recommended for the inhibition of Adducin  $\beta$  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  $\mu$ 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

Adducin  $\beta$  (E-11): sc-376063 is recommended as a control antibody for monitoring of Adducin  $\beta$  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 Adducin  $\beta$  gene expression knockdown using RT-PCR Primer: Adducin  $\beta$  (m)-PR: sc-37061-PR (20  $\mu$ l, 595 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Zhao, K.N., et al. 2011. Disruption of spectrin-like cytoskeleton in differentiating keratinocytes by PKC  $\delta$  activation is associated with phosphorylated adducin. *PLoS ONE* 6: e28267.
2. Wu, J., et al. 2015.  $\beta$ -Adducin siRNA disruption of the spectrin-based cytoskeleton in differentiating keratinocytes prevented by calcium acting through calmodulin/epidermal growth factor receptor/cadherin pathway. *Cell. Signal.* 27: 15-25.

## 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.