



## AP-4 $\epsilon$ siRNA (m): sc-141137

### BACKGROUND

AP-4 (adaptor-related protein complex 4) is a heterotetrameric complex comprised of subunits designated AP-4 $\beta$ , AP-4 $\epsilon$ , AP-4 $\mu$  and AP-4 $\sigma$ . AP-4 mediates the incorporation of cargo into transport vesicles by interacting with motifs present in the cytoplasmic tails of their specific cargo proteins at different intracellular locations. AP-4 localizes on the cytoplasmic face of the *trans*-Golgi network (TGN), Clathrin coat machinery of endosomes, and transport vesicles. AP-4 can position together with the Cl-MPR (cation-independent mannose 6-phosphate receptor). AP-4 may influence trafficking of glutamate receptor  $\delta 2$  (Grid2) in the brain. AP-4 participates in basolateral sorting in epithelial cells. AP-4 complex is expressed ubiquitously in many regions of brain, with localization on the Golgi-like structures in the cell bodies and dendrites of neurons.

### REFERENCES

1. Hirst, J., et al. 1999. Characterization of a fourth adaptor-related protein complex. *Mol. Biol. Cell* 10: 2787-802.
2. Dell'Angelica, E.C., et al. 1999. AP-4, a novel protein complex related to Clathrin adaptors. *J. Biol. Chem.* 274: 7278-7285.
3. Boehm, M., et al. 2001. Functional and physical interactions of the adaptor protein complex AP-4 with ADP-ribosylation factors (ARFs). *EMBO. J.* 20: 6265-6276.
4. Aguilar, R.C., et al. 2001. Signal-binding specificity of the  $\mu 4$  subunit of the adaptor protein complex AP-4. *J. Biol. Chem.* 276: 13145-13152.
5. Simmen, T., et al. 2002. AP-4 binds basolateral signals and participates in basolateral sorting in epithelial MDCK cells. *Nat. Cell Biol.* 4: 154-159.
6. Yap, C.C., et al. 2003. Adaptor protein complex-4 (AP-4) is expressed in the central nervous system neurons and interacts with glutamate receptor  $\delta 2$ . *Mol. Cell. Neurosci.* 24: 283-295.
7. Barois, N., et al. 2005. The adaptor protein AP-4 as a component of the Clathrin coat machinery: a morphological study. *Biochem. J.* 385: 503-510.

### CHROMOSOMAL LOCATION

Genetic locus: Ap4e1 (mouse) mapping to 2 F1.

### PRODUCT

AP-4 $\epsilon$  siRNA (m) is a pool of 2 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 AP-4 $\epsilon$  shRNA Plasmid (m): sc-141137-SH and AP-4 $\epsilon$  shRNA (m) Lentiviral Particles: sc-141137-V as alternate gene silencing products.

For independent verification of AP-4 $\epsilon$  (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-141137A and sc-141137B.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support 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  $\mu$ 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

AP-4 $\epsilon$  siRNA (m) is recommended for the inhibition of AP-4 $\epsilon$  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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AP-4 $\epsilon$  gene expression knockdown using RT-PCR Primer: AP-4 $\epsilon$  (m)-PR: sc-141137-PR (20  $\mu$ l). 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.