

AAK1 (LW-M11): sc-134242

BACKGROUND

Adaptor-related protein complex 2 (AP-2 complexes) operates during receptor-mediated endocytosis to initiate clathrin assembly, associates with membrane-bound receptors and mobilizes endocytic accessory factors. AAK1 (AP2 associated kinase 1), also known as adaptor-associated kinase 1, is a 961 amino acid protein belonging to the protein kinase superfamily and the serine/threonine protein kinase family. Encoded by a gene that maps to human chromosome 2p13.3, AAK1 participates in ATP and nucleotide binding, protein serine/threonine kinase functions and transferase activity. AAK1 phosphorylates a subunit of the AP-2 complex, which leads to binding of AP-2 to sorting signals in membrane-bound receptors, resulting in receptor endocytosis. AAK1 contains one protein kinase domain, with kinase activity stimulated by clathrin, and exists as two alternatively spliced isoforms.

REFERENCES

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- Conner, S.D. and Schmid, S.L. 2002. Identification of an adaptor-associated kinase, AAK1, as a regulator of clathrin-mediated endocytosis. *J. Cell Biol.* 156: 921-929.
- Conner, S.D. and Schmid, S.L. 2003. Differential requirements for AP-2 in clathrin-mediated endocytosis. *J. Cell Biol.* 162: 773-779.
- Conner, S.D., et al 2003. AAK1-mediated micro2 phosphorylation is stimulated by assembled clathrin. *Traffic* 4: 885-890.
- Mishra, S.K., et al. 2004. Dual engagement regulation of protein interactions with the AP-2 adaptor α appendage. *J. Biol. Chem.* 279: 46191-46203.
- Takahashi, T., et al. 2006. Endocytic Ark/Prk kinases play a critical role in adriamycin resistance in both yeast and mammalian cells. *Cancer Res.* 66: 11932-11937.
- Henderson, D.M. and Conner, S.D. 2007. A novel AAK1 splice variant functions at multiple steps of the endocytic pathway. *Mol. Biol. Cell* 18: 2698-2706.

CHROMOSOMAL LOCATION

Genetic locus: AAK1 (human) mapping to 2p13.3.

SOURCE

AAK1 (LW-M11) is a mouse monoclonal antibody raised against recombinant AAK1 protein of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

AAK1 (LW-M11) is recommended for detection of AAK1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AAK1 siRNA (h): sc-94850, AAK1 shRNA Plasmid (h): sc-94850-SH and AAK1 shRNA (h) Lentiviral Particles: sc-94850-V.

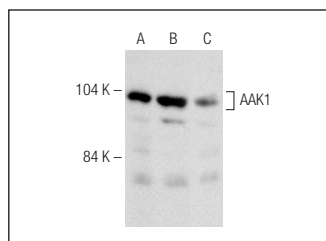
Molecular Weight of AAK1: 104 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, HeLa whole cell lysate: sc-2200 or AAK1 (h): 293 Lysate: sc-158217.

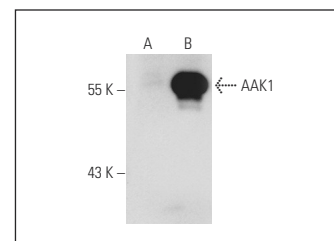
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



AAK1 (LW-M11): sc-134242. Western blot analysis of AAK1 expression in U-87 MG (A) and HeLa (B) whole cell lysates and rat kidney tissue extract (C).



AAK1 (LW-M11): sc-134242. Western blot analysis of AAK1 expression in non-transfected: sc-110760 (A) and human AAK1 transfected: sc-158217 (B) 293 whole cell lysates.

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.