

Alpha 4 (5F6): sc-81608

BACKGROUND

Alpha 4 is a cytoplasmic protein which associates with surface IgM-receptor and may help regulate signal transduction. Alpha 4 regulates the catalytic activity of type 2A-related serine/threonine phosphatases (PP2A) and interacts with MID1, the product of the gene mutated in X-linked Opitz GBBB syndrome. PP2Ac accumulation is caused by an impairment of E3 ubiquitin ligase activity of the MID1 protein which normally targets PP2Ac for degradation through binding to its Alpha 4 regulatory subunit. Patients with Opitz GBBB syndrome suffer from a variable array of developmental defects including craniofacial, cardiac and genital anomalies. Alpha 4 is present at highest levels in heart, skeletal muscle and pancreas, and is a member of the IGBP1/Tap42 family.

REFERENCES

1. Trockenbacher, A., et al. 2001. MID1, mutated in Opitz syndrome, encodes an ubiquitin ligase that targets phosphatase 2A for degradation. *Nat. Genet.* 29: 287-294.
2. Liu, J., et al. 2001. Phosphorylation and microtubule association of the Opitz syndrome protein MID1 is regulated by protein phosphatase 2A via binding to the regulatory subunit Alpha 4. *Proc. Natl. Acad. Sci. USA* 98: 6650-6655.
3. Everett, A.D., et al. 2002. Developmental expression of Alpha 4 protein phosphatase regulatory subunit in tissues affected by Opitz syndrome. *Dev. Dyn.* 224: 461-464.
4. Short, K.M., et al. 2002. MID1 and MID2 homo- and heterodimerise to tether the Rapamycin-sensitive PP2A regulatory subunit, Alpha 4, to microtubules: implications for the clinical variability of X-linked Opitz GBBB syndrome and other developmental disorders. *BMC Cell Biol.* 3: 1.
5. Graham, J.M., Jr., et al. 2003. A new X-linked syndrome with agenesis of the corpus callosum, mental retardation, coloboma, micrognathia and a mutation in the Alpha 4 gene at Xq13. *Am. J. Med. Genet. A* 123: 37-44.
6. SWISS-PROT/TrEMBL (P78318). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: IGBP1 (human) mapping to Xq13.1; Igbp1b (mouse) mapping to X C3.

SOURCE

Alpha 4 (5F6) is a mouse monoclonal antibody raised against His-tagged recombinant Alpha 4 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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

Alpha 4 (5F6) is recommended for detection of Alpha 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Alpha 4 siRNA (h): sc-44648, Alpha 4 siRNA (m): sc-44649, Alpha 4 shRNA Plasmid (h): sc-44648-SH, Alpha 4 shRNA Plasmid (m): sc-44649-SH, Alpha 4 shRNA (h) Lentiviral Particles: sc-44648-V and Alpha 4 shRNA (m) Lentiviral Particles: sc-44649-V.

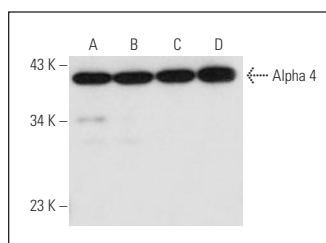
Molecular Weight of Alpha 4: 45 kDa.

Positive Controls: Raji whole cell lysate: sc-364236, K-562 whole cell lysate: sc-2203 or Ramos cell lysate: sc-2216.

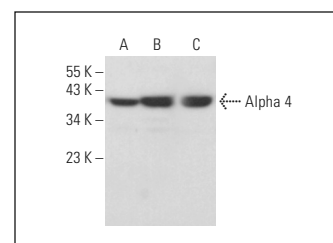
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Alpha 4 (5F6): sc-81608. Western blot analysis of Alpha 4 expression in Jurkat (A), K-562 (B), Ramos (C) and HeLa (D) whole cell lysates.



Alpha 4 (5F6): sc-81608. Western blot analysis of Alpha 4 expression in Caco-2 (A), A549 (B) and Raji (C) 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.