

# Alpha 4 (V-20): sc-32173

## 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; Igpb1 (mouse) mapping to X C3.

## SOURCE

Alpha 4 (V-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Alpha 4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32173 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

Alpha 4 (V-20) 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), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

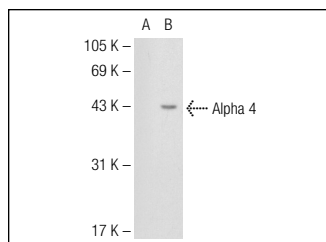
Alpha 4 (V-20) is also recommended for detection of Alpha 4 in additional species, including canine and bovine.

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.

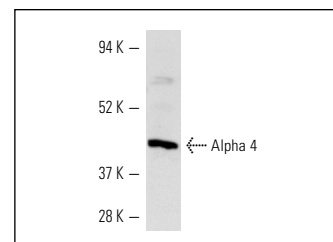
Molecular Weight of Alpha 4: 45 kDa.

Positive Controls: Alpha 4 (h2): 293T Lysate: sc-173533, K-562 whole cell lysate: sc-2203 or Ramos cell lysate: sc-2216.

## DATA



Alpha 4 (V-20): sc-32173. Western blot analysis of Alpha 4 expression in non-transfected: sc-117752 (A) and human Alpha 4 transfected: sc-173533 (B) 293T whole cell lysates.



Alpha 4 (V-20): sc-32173. Western blot analysis of Alpha 4 expression in Jurkat whole cell lysate.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Alpha 4 (B-5): sc-373719** or **Alpha 4 (5F6): sc-81608**, our highly recommended monoclonal alternatives to Alpha 4 (V-20).