

# ALX4 (N-12): sc-22066

## BACKGROUND

ALX4 (aristaless-like homeobox 4) is a DNA-binding transcription factor involved in skull and limb development. It is a nuclear protein with expression restricted to bone. Defects in ALX4 are the cause of parietal foramina 2 (PFM2), also known as foramina parietalia permagna. PFM2 is an autosomal dominant disease characterized by oval defects of the parietal bones caused by deficient ossification around the parietal notch, which is normally obliterated during the fifth fetal month. PFM2 is also a clinical feature of Potocki-Shaffer syndrome. BMP induces *Msx2* and ALX4 expression in calvarial mesenchyme tissue. Northern blot analysis demonstrates that expression of both the human and mouse ALX4 genes is restricted to bone.

## REFERENCES

1. Qu, S., et al. 1999. Physical and genetic interactions between ALX4 and CART 1. *Development* 126: 359-369.
2. Beverdam, A., et al. 2001. Severe nasal clefting and abnormal embryonic apoptosis in ALX3/ALX4 double mutant mice. *Development* 128: 3975-3986.
3. Mavrogianis, L.A., et al. 2001. Haploinsufficiency of the human homeobox gene ALX4 causes skull ossification defects. *Nat. Genet.* 27: 17-18.
4. Asbreuk, C.H., et al. 2002. Survey for paired-like homeodomain gene expression in the hypothalamus: restricted expression patterns of Rx, ALX4 and goosecoid. *Neuroscience* 114: 883-889.
5. Boras, K., et al. 2002. ALX4 binding to LEF-1 regulates N-CAM promoter activity. *J. Biol. Chem.* 277: 1120-1127.
6. Rice R., et al. 2003. Progression of calvarial bone development requires FOXC1 regulation of *Msx2* and ALX4. *Dev. Biol.* 262: 75-87.
7. Antonopoulou I., et al. 2004. ALX4 and *Msx2* play phenotypically similar and additive roles in skull vault differentiation. *J. Anatomy.* 204: 487-499.

## CHROMOSOMAL LOCATION

Genetic locus: ALX4 (human) mapping to 11p11.2; Alx4 (mouse) mapping to 2 E1.

## SOURCE

ALX4 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ALX4 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-22066 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-22066 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

ALX4 (N-12) is recommended for detection of ALX4 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).

ALX4 (N-12) is also recommended for detection of ALX4 in additional species, including canine and bovine.

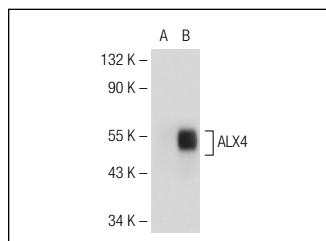
Suitable for use as control antibody for ALX4 siRNA (h): sc-44976, ALX4 siRNA (m): sc-44977, ALX4 shRNA Plasmid (h): sc-44976-SH, ALX4 shRNA Plasmid (m): sc-44977-SH, ALX4 shRNA (h) Lentiviral Particles: sc-44976-V and ALX4 shRNA (m) Lentiviral Particles: sc-44977-V.

ALX4 (N-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ALX4: 60 kDa.

Positive Controls ALX4 (m): 293T Lysate: sc-126413, C3H/10T1/2 cell lysate: sc-3801 or 3T3-L1 cell lysate: sc-2243.

## DATA



ALX4 (N-12): sc-22066. Western blot analysis of ALX4 expression in non-transfected: sc-117752 (A) and mouse ALX4 transfected: sc-126413 (B) 293T whole cell lysates.

## 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) or our catalog for detailed protocols and support products.

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Try **ALX4 (KAB4): sc-33643**, our highly recommended monoclonal alternative to ALX4 (N-12).