SANTA CRUZ BIOTECHNOLOGY, INC.

OTX2 (H-145): sc-292478

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Transcription factors OTX1 and OTX2, two murine homologs of the *Drosophila* orthodenticle (OTD), show a limited amino acid sequence divergence. OTX1 and OTX2 play an important role during early and later events required for proper brain development in that they are involved in the processes of induction, specification and regionalization of the brain. OTX1 is involved in corticogenesis, sensory organ development and pituitary functions, while OTX2 is necessary earlier in development, for the correct anterior neural plate specification and organization of the primitive streak. OTX2 is also required in the early specification of the neuroectoderm, which is destined to become the fore-midbrain, and both OTX1 and OTX2 co-operate in patterning the developing brain through a dosage-dependent mechanism. A molecular mechanism depending on a precise threshold of OTX proteins is necessary for the correct positioning of the isthmic region and for anterior brain patterning. The genes which encode OTX1 and OTX2 map to human chromosomes 2p13 and 14q22.3, respectively.

REFERENCES

1. Kastury, K., et al. 1994. Chromosome locations of human EMX and OTX genes. Genomics 22: 41-45.
2. Acampora, D., et al. 1999. OTX genes in corticogenesis and brain development. Cereb. Cortex 9: 533-542.
3. Acampora, D., et al. 1999. The TINS Lecture. Understanding the roles of OTX1 and OTX2 in the control of brain morphogenesis. Trends Neurosci. 22: 116-122.
4. Acampora, D., et al. 1999. OTX genes and the genetic control of brain morphogenesis. Mol. Cell. Neurosci. 13: 1-8.
5. Suda, Y., et al. 1999. Functional equivalency between OTX2 and OTX1 in development of the rostral head. Development 126: 743-757.
6. Acampora, D., et al. 1999. Differential transcriptional control as the major molecular event in generating OTX1$^{-/-}$ and OTX2$^{-/-}$ divergent phenotypes. Development 126: 1417-1426.
7. Morsli, H., et al. 1999. OTX1 and OTX2 activities are required for the normal development of the mouse inner ear. Development 126: 2335-2343.
8. Acampora, D., et al. 2000. Genetic and molecular roles of OTX homeodomain proteins in head development. Gene 246: 23-35.

CHROMOSOMAL LOCATION

Genetic locus: OTX2 (human) mapping to 14q22.3; Otx2 (mouse) mapping to 14 C1.

SOURCE

OTX2 (H-145) is a rabbit polyclonal antibody raised against amino acids 115-259 mapping near the C-terminus of OTX2 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.

APPLICATIONS

OTX2 (H-145) is recommended for detection of OTX2 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).

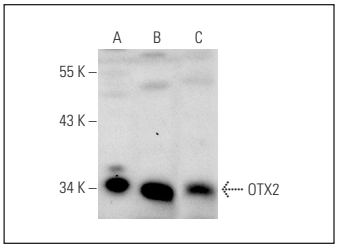
OTX2 (H-145) is also recommended for detection of OTX2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for OTX2 siRNA (h): sc-38741, OTX2 siRNA (m): sc-38742, OTX2 shRNA Plasmid (h): sc-38741-SH, OTX2 shRNA Plasmid (m): sc-38742-SH, OTX2 shRNA (h) Lentiviral Particles: sc-38741-V and OTX2 shRNA (m) Lentiviral Particles: sc-38742-V.

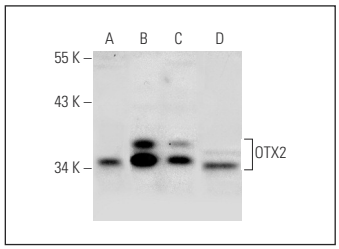
Molecular Weight of OTX2: 34-37 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Hep G2 nuclear extract: sc-364819 or Jurkat whole cell lysate: sc-2204.

DATA



OTX2 (H-145): sc-292478. Western blot analysis of OTX2 expression in HeLa nuclear extract (**A**) and mouse brain (**B**) and mouse cerebellum (**C**) tissue extracts.



OTX2 (H-145): sc-292478. Western blot analysis of OTX2 expression in Hep G2 (**A**), Jurkat (**B**) and Y79 (**C**) nuclear extracts and NTERA-2 cl.D1(**D**) 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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.