SANTA CRUZ BIOTECHNOLOGY, INC.

OTX1 (Y-22): sc-133872

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 cooperate 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 2p15 and 14q21-q22, 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: OTX1 (human) mapping to 2p15; Otx1 (mouse) mapping to 11 A3.2.

SOURCE

OTX1 (Y-22) is a Protein A purified rabbit polyclonal antibody raised against synthetic OTX1 peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

OTX1 (Y-22) is recommended for detection of OTX1 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for OTX1 siRNA (h): sc-38739, OTX1 siRNA (m): sc-38740, OTX1 shRNA Plasmid (h): sc-38739-SH, OTX1 shRNA Plasmid (m): sc-38740-SH, OTX1 shRNA (h) Lentiviral Particles: sc-38739-V and OTX1 shRNA (m) Lentiviral Particles: sc-38740-V.

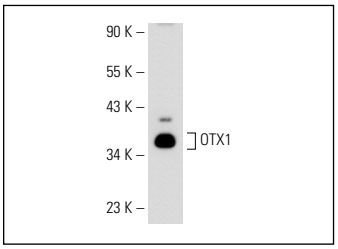
Molecular Weight of THP-1: 37 kDa.

Positive Controls: THP-1 cell lysate: sc-2238 or Jurkat whole cell lysate: sc-2204.

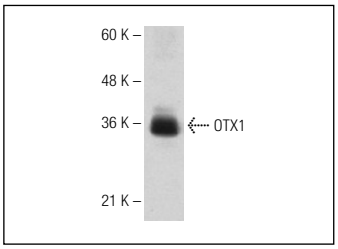
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), 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



OTX1 (Y-22): sc-133872. Western blot analysis of OTX1 expression in THP-1 whole cell lysate.



OTX1 (Y-22): sc-133872. Western blot analysis of OTX1 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.

RESEARCH USE

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