

OTX3 (Y-24): sc-133874

BACKGROUND

Transcription factors, OTX1 and OTX2, are 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 related family member OTX3 is expressed in developing neural tissues and is required for postnatal survival, growth and brain development. OTX3 acts as a repressor of OTX2-mediated transactivation by forming a heterodimer with OTX2 on the TAATCC consensus motif.

REFERENCES

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2. Acampora, D., et al. 1999. Differential transcriptional control as the major molecular event in generating OTX1^{-/-} and OTX2^{-/-} divergent phenotypes. *Development* 126: 1417-1426.
3. Acampora, D., et al. 1999. OTX genes in corticogenesis and brain development. *Cereb. Cortex* 9: 533-542.
4. 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.
5. Acampora, D., et al. 1999. OTX genes and the genetic control of brain morphogenesis. *Mol. Cell. Neurosci.* 13: 1-8.
6. Zhang, Y., et al. 2002. Identification, tissue expression, and a novel member of the OTX family. *J. Biol. Chem.* 277: 28065-28069.
7. Ohtoshi, A. and Behringer, R.R. 2004. Neonatal lethality, dwarfism, and abnormal brain development in Dmbx1 mutant mice. *Mol. Cell. Biol.* 24: 7548-7558.
8. Kimura, K., et al. 2005. Functional analysis of transcriptional repressor OTX3/Dmbx1. *FEBS Lett.* 579: 2926-2932.

CHROMOSOMAL LOCATION

Genetic locus: DMBX1 (human) mapping to 1p33; Dmbx1 (mouse) mapping to 4 D1.

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 or our catalog for detailed protocols and support products.

SOURCE

OTX3 (Y-24) is an affinity purified rabbit polyclonal antibody raised against synthetic OTX3 peptide of mouse origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

OTX3 (Y-24) is recommended for detection of OTX3 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).

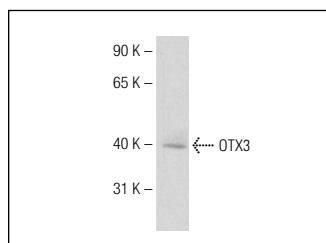
Suitable for use as control antibody for OTX3 siRNA (h): sc-61271, OTX3 siRNA (m): sc-61272, OTX3 shRNA Plasmid (h): sc-61271-SH, OTX3 shRNA Plasmid (m): sc-61272-SH, OTX3 shRNA (h) Lentiviral Particles: sc-61271-V and OTX3 shRNA (m) Lentiviral Particles: sc-61272-V.

Molecular Weight of OTX3: 41 kDa.

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



OTX3 (Y-24): sc-133874. Western blot analysis of OTX3 expression in mouse brain tissue extract.

RESEARCH USE

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