

OTX2 (h2): 293T Lysate: sc-172552

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 molecular mechanism depending on a precise threshold of OTX proteins is necessary for the correct positioning of the isthmus region and for anterior brain patterning. The genes which encode OTX1 and OTX2 map to human chromosomes 2p15 and 14q22.3, respectively.

REFERENCES

1. Kastury, K., Druck, T., Huebner, K., Barletta, C., Acampora, D., Simeone, A., Faiella, A. and Boncinelli, E. 1994. Chromosome locations of human EMX and OTX genes. *Genomics* 22: 41-45.
2. Suda, Y., Nakabayashi, J., Matsuo, I. and Aizawa, S. 1999. Functional equivalency between OTX2 and OTX1 in development of the rostral head. *Development* 126: 743-757.
3. Acampora, D., Avantaggiato, V., Tuorto, F., Barone, P., Perera, M., Choo, D., Wu, D., Corte, G. and Simeone, A. 1999. Differential transcriptional control as the major molecular event in generating OTX1^{-/-} and OTX2^{-/-} divergent phenotypes. *Development* 126: 1417-1426.
4. Morsli, H., Tuorto, F., Choo, D., Postiglione, M.P., Simeone, A. and Wu, D.K. 1999. OTX1 and OTX2 activities are required for the normal development of the mouse inner ear. *Development* 126: 2335-2343.
5. Acampora, D., Barone, P. and Simeone, A. 1999. OTX genes in corticogenesis and brain development. *Cereb. Cortex* 9: 533-542.
6. Acampora, D. and Simeone, A. 1999. The TINS Lecture. Understanding the roles of OTX1 and OTX2 in the control of brain morphogenesis. *Trends Neurosci.* 22: 116-122.
7. Acampora, D., Gulisano, M. and Simeone, A. 1999. OTX genes and the genetic control of brain morphogenesis. *Mol. Cell. Neurosci.* 13: 1-8.
8. Acampora, D., Gulisano, M. and Simeone, A. 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.

PRODUCT

OTX2 (h2): 293T Lysate represents a lysate of human OTX2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

OTX2 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive OTX2 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.