SANTA CRUZ BIOTECHNOLOGY, INC.

OTX2 (D-8): sc-514195

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.

CHROMOSOMAL LOCATION

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

SOURCE

OTX2 (D-8) is a mouse monoclonal antibody raised against amino acids 115-259 mapping near the C-terminus of OTX2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

OTX2 (D-8) is available conjugated to agarose (sc-514195 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514195 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514195 PE), fluorescein (sc-514195 FITC), Alexa Fluor® 488 (sc-514195 AF488), Alexa Fluor® 546 (sc-514195 AF546), Alexa Fluor® 594 (sc-514195 AF594) or Alexa Fluor® 647 (sc-514195 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514195 AF680) or Alexa Fluor® 790 (sc-514195 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

OTX2 (D-8) is recommended for detection of OTX2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

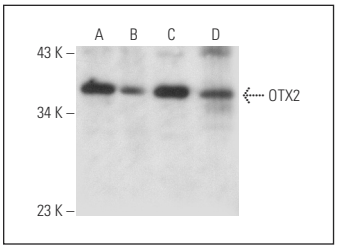
Molecular Weight of OTX2: 34-37 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or Y79 cell lysate: sc-2240.

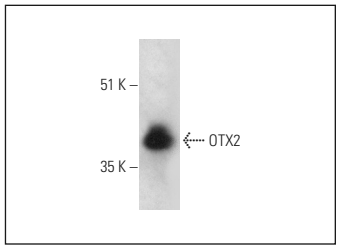
STORAGE

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

DATA



OTX2 (D-8): sc-514195. Western blot analysis of OTX2 expression in Jurkat (**A**), Hep G2 (**B**) and HeLa (**C**) nuclear extracts and U-87 MG whole cell lysate (**D**).



OTX2 (D-8) HRP: sc-514195 HRP. Direct western blot analysis of OTX2 expression in Y79 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Fukuda, T., et al. 2018. The poly-cistronic expression of four transcriptional factors (CRX, RAX, Neuro-D, OTX2) in fibroblasts via retro- or lentivirus causes partial reprogramming into photoreceptor cells. Cell Biol. Int. 42: 608-614.
2. Luo, J., et al. 2019. DMBX1 promotes tumor proliferation and regulates cell cycle progression via repressing OTX2-mediated transcription of p21 in lung adenocarcinoma cell. Cancer Lett. 453: 45-56.
3. Bejoy, J., et al. 2020. Wnt-Notch signaling interactions during neural and astroglial patterning of human stem cells. Tissue Eng. Part A 26: 419-431.
4. Ballabio, C., et al. 2020. Modeling medulloblastoma *in vivo* and with human cerebellar organoids. Nat. Commun. 11: 583.
5. Xiang, L., et al. 2020. A developmental landscape of 3D-cultured human pre-gastrulation embryos. Nature 577: 537-542.
6. Tan, T., et al. 2021. Chimeric contribution of human extended pluripotent stem cells to monkey embryos *ex vivo*. Cell 184: 2020-2032.e14.
7. Souralova, T., et al. 2021. Xeno- and feeder-free derivation of two sex-discordant sibling lines of human embryonic stem cells. Stem Cell Res. 57: 102574.
8. Parichha, A., et al. 2022. Constitutive activation of canonical Wnt signaling disrupts choroid plexus epithelial fate. Nat. Commun. 13: 633.
9. Souralova, T., et al. 2022. The manufacture of xeno- and feeder-free clinical-grade human embryonic stem cell lines: first step for cell therapy. Int. J. Mol. Sci. 23: 12500.
10. Wesley, C.C., et al. 2023. Differentiation-dependent changes in Lamin B1 dynamics and Lamin B Receptor localization. Mol. Biol. Cell 34: ar10.

RESEARCH USE

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