

Emx1 (G-6): sc-398115

BACKGROUND

Emx1 and Emx2 are human homologs to the *Drosophila* developmental genes empty spiracles expressed in anterior body regions during early *Drosophila* embryogenesis. Emx1 and Emx2 are homeobox proteins expressed in the developing vertebrate brain. Emx2 is expressed in the dorsal telencephalon and small diencephalic regions, while Emx1 expression is exclusively confined to pyramidal neurons of the dorsal telencephalon. In the embryonic brain, Emx1 is expressed in both proliferating and differentiating neurons while Emx2 is expressed only in proliferating neurons. OTX1 and OTX2 are human homologs of the *Drosophila* developmental genes orthodenticle. In development, the sequence of expression begins with OTX2 at day 10 post coitum followed by OTX1, Emx2 and finally Emx1. The genes encoding human Emx1 and Emx2 map to chromosomes 2p13.2 and 10q26.1, respectively.

REFERENCES

1. Simeone, A., et al. 1992. Two vertebrate homeobox genes related to the *Drosophila* empty spiracles gene are expressed in the embryonic cerebral cortex. *EMBO J.* 11: 2541-2550.
2. Simeone, A., et al. 1992. Nested expression domains of four homeobox genes in developing rostral brain. *Nature* 358: 687-690.
3. Kastury, K., et al. 1994. Chromosome locations of human Emx and OTX genes. *Genomics* 22: 41-45.
4. Gulisano, M., et al. 1996. Emx1 and Emx2 show different patterns of expression during proliferation and differentiation of the developing cerebral cortex in the mouse. *Eur. J. Neurosci.* 8: 1037-1050.
5. Chan, C.H., et al. 2001. Emx1 is a marker for pyramidal neurons of the cerebral cortex. *Cereb. Cortex* 11: 1191-1198.

CHROMOSOMAL LOCATION

Genetic locus: EMX1 (human) mapping to 2p13.2; Emx1 (mouse) mapping to 6 C3.

SOURCE

Emx1 (G-6) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of Emx1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398115 X, 200 µg/0.1 ml.

Emx1 (G-6) is available conjugated to agarose (sc-398115 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398115 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398115 PE), fluorescein (sc-398115 FITC), Alexa Fluor® 488 (sc-398115 AF488), Alexa Fluor® 546 (sc-398115 AF546), Alexa Fluor® 594 (sc-398115 AF594) or Alexa Fluor® 647 (sc-398115 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398115 AF680) or Alexa Fluor® 790 (sc-398115 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Emx1 (G-6) is recommended for detection of Emx1 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 Emx1 siRNA (h): sc-38735, Emx1 siRNA (m): sc-38736, Emx1 shRNA Plasmid (h): sc-38735-SH, Emx1 shRNA Plasmid (m): sc-38736-SH, Emx1 shRNA (h) Lentiviral Particles: sc-38735-V and Emx1 shRNA (m) Lentiviral Particles: sc-38736-V.

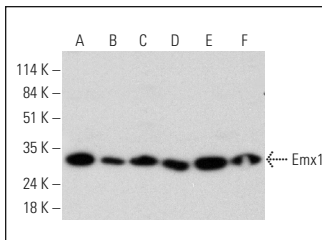
Emx1 (G-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Emx1 isoforms: 28/13 kDa.

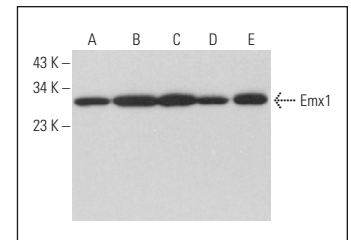
Molecular Weight (observed) of Emx1: 16/34 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Hep G2 cell lysate: sc-2227 or PC-3 cell lysate: sc-2220.

DATA



Emx1 (G-6): sc-398115. Western blot analysis of Emx1 expression in Caki-1 (A), SK-N-SH (B), c4 (C), BC₃H1 (D), KNRK (E) and C6 (F) whole cell lysates.



Emx1 (G-6): sc-398115. Western blot analysis of Emx1 expression in Hep G2 (A), K-562 (B), PC-3 (C), PC-12 (D) and A-10 (E) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Han, Z., et al. 2022. Emx1 functions as a tumor inhibitor in spinal cord glioma through transcriptional suppression of WAF2 and inactivation of the Wnt/β-catenin axis. *Brain Behav.* 12: e2684.
2. Liu, X., et al. 2022. Di-2-ethylhexyl phthalate affects zinc metabolism and neurogenesis in the developing rat brain. *Arch. Biochem. Biophys.* 727: 109351.

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 for detailed protocols and support products.