

# LMX1A (G-17): sc-54274

## BACKGROUND

LMX1A, also called LMX-1.1 or LIM homeobox transcription factor 1  $\alpha$ , belongs to the LIM-homeodomain family. Members of this family are known to be important for pattern formation during development. LMX1A functions in the nucleus as a transcriptional activator to the Insulin gene promoter. In the developing embryo, LMX1A is expressed along the neuraxis and leads to the development of the roof plate of the vertebrae. Two isoforms of LMX1A exist due to alternative splicing. Isoform 1 represents the full length protein and is expressed in many tissues including fetal brain, but is absent in heart, liver, spleen and testis. The second isoform, designated LMX1A-4AB, lacks amino acids 1-249 and is expressed in testis.

## REFERENCES

1. Millonig, J.H., et al. 2000. The mouse dreher gene *Lmx1a* controls formation of the roof plate in the vertebrate CNS. *Nature* 403: 764-769.
2. Thameem, F., et al. 2002. Cloning, expression and genomic structure of human LMX1A, and variant screening in Pima Indians. *Gene* 290: 217-225.
3. Failli, V., et al. 2002. Expression of the LIM-homeodomain gene *Lmx1a* (dreher) during development of the mouse nervous system. *Mech. Dev.* 118: 225-228.
4. Chizhikov, V.V. and Millen, K.J. 2004. Control of roof plate formation by LMX1A in the developing spinal cord. *Development* 131: 2693-2705.
5. Chizhikov, V.V. and Millen, K.J. 2004. Control of roof plate development and signaling by LMX1B in the caudal vertebrate CNS. *J. Neurosci.* 24: 5694-5703.
6. Andersson, E., et al. 2006. Identification of intrinsic determinants of mid-brain dopamine neurons. *Cell* 124: 393-405.
7. Burbach, J.P. and Smidt, M.P. 2006. Molecular programming of stem cells into mesodiencephalic dopaminergic neurons. *Trends Neurosci.* 29: 601-603.

## CHROMOSOMAL LOCATION

Genetic locus: LMX1A (human) mapping to 1q23.3; *Lmx1a* (mouse) mapping to 1 H2.3.

## SOURCE

LMX1A (G-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of LMX1A of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54274 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and CHIP applications, sc-54274 X, 200  $\mu$ g/0.1 ml.

## RESEARCH USE

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

## APPLICATIONS

LMX1A (G-17) is recommended for detection of LMX1A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

LMX1A (G-17) is also recommended for detection of LMX1A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for LMX1A siRNA (h): sc-72343, LMX1A siRNA (m): sc-72344, LMX1A shRNA Plasmid (h): sc-72343-SH, LMX1A shRNA Plasmid (m): sc-72344-SH, LMX1A shRNA (h) Lentiviral Particles: sc-72343-V and LMX1A shRNA (m) Lentiviral Particles: sc-72344-V.

LMX1A (G-17) X TransCruz antibody is recommended for Gel Supershift and CHIP applications.

Molecular Weight of LMX1A isoform 1: 43 kDa.

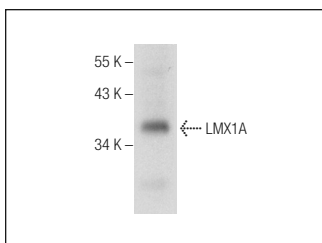
Molecular Weight of LMX1A isoform LMX1A-4AB: 15 kDa.

Positive Controls: Mouse brain extract: sc-2253 or HL-60 whole cell lysate: sc-2209.

## 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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



LMX1A (G-17): sc-54274. Western blot analysis of LMX1A expression in mouse brain tissue extract.

## STORAGE

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