

Anti-Dlx2 antibody, guinea pig polyclonal

74-116 50 μ l

Shipping and Storage: Ship at 4°C and store at -20°C. Do not repeat freeze-thaw cycle

Reactivity: Reacts with mouse, marmoset, human

Immunogen: Recombinant MBP-Dlx2 (amino acids 1-154) protein.

Applications:

1. Western blot (1/1,000)
2. Immunofluorescent/Immunocytochemical staining
3. Immunohistochemistry (1/2,000-1/3,000)
4. Chromatin-ImmunoPrecipitation (assay dependent)

Form: Whole guinea pig antiserum added with 0.09 % sodium azide.

Background: Acts as a transcriptional activator (PubMed:[21875655](#)). Plays a role in terminal differentiation of interneurons, such as amacrine and bipolar cells in the developing retina (PubMed:[21875655](#)). Likely to play a regulatory role in the development of the ventral forebrain (PubMed:[1678612](#)). May play a role in craniofacial patterning and morphogenesis (PubMed:[1678612](#)). Length:332 amino acids. Mass (Da): 34746

Subcellular localization: Nucleus.

Data Link: UniProtKB (DLX2_MOUSE)

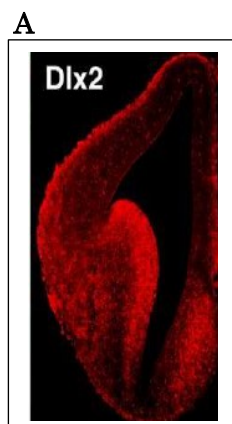
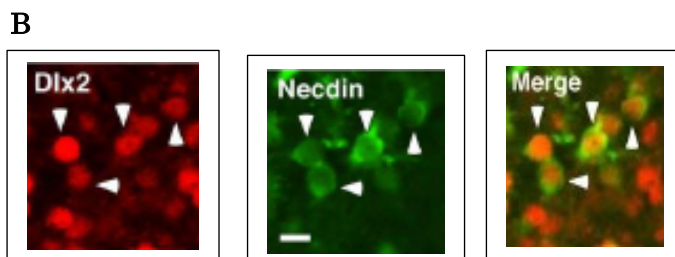


Fig Immunohistochemical staining of Dlx2 in mouse embryonic forebrain.

A. 13.5 forebrain cryo-section was immunostained for Dlx2.

B. Enlarged image of A of the septum. Double staining of Dlx2 with Necdin. Arrowheads indicate double-stained cells.

The anti-Dlx2 antibody was used at 1/3,000 dilution and anti-Necdin antibody (BioAcademia 74-100) was at 1/1,000.



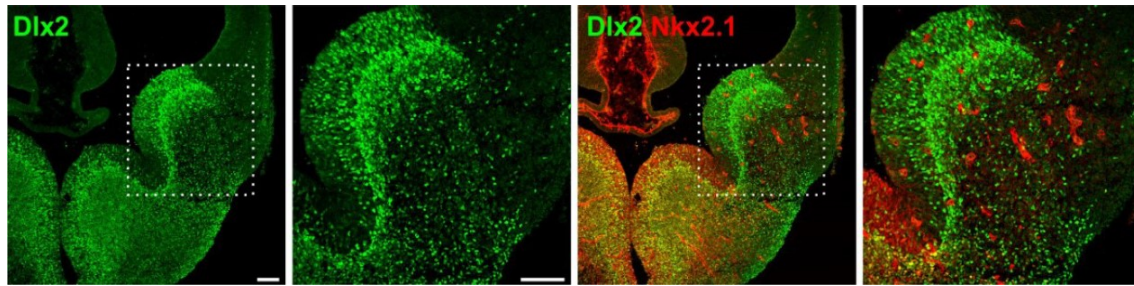


Fig 2. Immunohistochemical staining of Dlx2 in mouse embryonic forebrain: Comparison with Nkx2.1, expressed in the similar region.

Sample is E13.5 Sections. The Dlx2 antiserum was used at 1/3,000 (Green) and anti-Nkx2.1 mouse antibody (Red, Novocastra) at 1/500.

Reference: This antibody has been used in the following publications.

1. Kuwajima T et al. Necdin promotes GABAergic neuron differentiation in cooperation with Dlx homeodomain proteins. *J Neurosci*. 2006 May 17;26(20):5383-92. PMID: [16707790](#) **WB, IHC-F (mouse)**
2. Long JE et al. Dlx-dependent and -independent regulation of olfactory bulb interneuron differentiation. *J Neurosci*. 2007 Mar 21;27(12):3230-43. PMID: [17376983](#) **IHC (mouse). KO-Validated**
3. Colasante G et al. Arx is a direct target of Dlx2 and thereby contributes to the tangential migration of GABAergic interneurons. *J Neurosci*. 2008 Oct 15;28(42):10674-86. PMID: [18923043](#), **ChIP (mouse)**
4. Hansen DV et al. Non-epithelial stem cells and cortical interneuron production in the human ganglionic eminences. *Nat Neurosci*. 2013 Nov;16(11):1576-87. **IHC-F (human)**
5. Wu H et al. Dnmt3a-Dependent Nonpromoter DNA Methylation Facilitates Transcription of Neurogenic Genes. *Science*. 2010 Jul 23; 329(5990): 444–448. PMID: [20651149](#) **IHC-F (mouse)**
9. de Chevigny A et al. Dynamic expression of the pro-dopaminergic transcription factors Pax6 and Dlx2 during postnatal olfactory bulb neurogenesis. *Front Cell Neurosci*. 2012 Feb 27;6:6. PMID: [22371698](#). **IHC (mouse)**
10. Kuwajima T. et al. Necdin Promotes Tangential Migration of Neocortical Interneurons from Basal Forebrain. *J Neurosci*. 2010 Mar 10;30(10):3709-14. PMID: [20220004](#). **IHC-F (mouse)**
11. López-Juárez A. et al. Thyroid hormone signaling acts as a neurogenic switch by

- repressing Sox2 in the adult neural stem cell niche. [Cell Stem Cell](#). 2012 May 4;10(5):531-43. PMID: [22560077](#). **IHC-F (mouse)**
12. Wang Y et al. ERK inhibition rescues fate-specification defects of Nf1-deficient neural progenitors and brain abnormalities. [Cell](#). 2012 Aug 17;150(4):816-30. PMID: [22901811](#). **IHC-P (mouse)**
13. Ghanem N. et al. The Rb/E2F pathway modulates neurogenesis through direct regulation of the Dlx1/Dlx2 bigene cluster. [J Neurosci](#). 2012 Jun 13;32(24):8219-30. PMID: [22699903](#). **IHC-F (mouse)**
14. Gajera CR et al. LRP2 in ependymal cells regulates BMP signaling in the adult neurogenic niche. [J Cell Sci](#). 2010 Jun 1;123(Pt 11):1922-30. PMID: [20460439](#). **IHC (mouse)**
15. Potter GB et al. Generation of Cre-transgenic mice using *Dlx1/Dlx2* enhancers and their characterization in GABAergic interneurons. [Mol Cell Neurosci](#). 2009 Feb;40(2):167-86. PMID: [19026749](#). **IHC-F (mouse)**
16. Bluske KK et al. β -Catenin signaling specifies progenitor cell identity in parallel with Shh signaling in the developing mammalian thalamus. [Development](#). 2012 Aug;139(15):2692-702. PMID: [22745311](#) **IHC-F (mouse)**
17. Walzlein JH et al. The antitumorigenic response of neural precursors depends on subventricular proliferation and age. [Stem Cells](#). 2008 Nov;26(11):2945-54. PMID: [18757298](#) **IHC (mouse)**
18. Rolando C et al. Extracerebellar progenitors grafted to the neurogenic milieu of the postnatal rat cerebellum adapt to the host environment but fail to acquire cerebellar identities. [Eur J Neurosci](#). 2010 Apr;31(8):1340-51. PMID: [20384777](#). **IHC-F (rat)**
19. Zhong J et al. The Wnt receptor Ryk controls specification of GABAergic neurons versus oligodendrocytes during telencephalon development. [Development](#). 2011 Feb;138(3):409-19. PMID: [21205786](#). **IHC-F (mouse)**
20. Tepavčević V et al. Inflammation-induced subventricular zone dysfunction leads to olfactory deficits in a targeted mouse model of multiple sclerosis. [J Clin Invest](#). 2011 Dec;121(12):4722-34. PMID: [22056384](#). **IHC-F (mouse)**
21. Azim K et al. 3-dimensional examination of the adult mouse subventricular zone reveals lineage-specific microdomains. [PLoS One](#). 2012;7(11):e49087. PMID: [23166605](#). **IHC-F (mouse)**
22. Mukhopadhyay A et al. BMP receptor 1A regulates development of hypothalamic circuits critical for feeding behavior. [J Neurosci](#). 2012 Nov 28;32(48):17211-24. PMID: [23197713](#). **IHC-F (mouse)**
23. Liu J et al. Prospective separation and transcriptome analyses of cortical projection

- neurons and interneurons based on lineage tracing by Tbr2 (Eomes)-GFP/Dcx-mRFP reporters. [Dev Neurobiol.](#) 2016 Jun;76(6):587-99. PMID: [26248544](#). **IHC (mouse)**
24. Azim K et al. Early Decline in Progenitor Diversity in the Marmoset Lateral Ventricle, *Cerebral Cortex*, Volume 23, Issue 4, 1 April 2013, Pages 922–931. <https://doi.org/10.1093/cercor/bhs085>. **IHC (marmoset)**
25. Huang Z et al. Necdin Controls Proliferation and Apoptosis of Embryonic Neural Stem Cells in an Oxygen Tension-Dependent Manner. [J Neurosci.](#) 2013 Jun 19;33(25):10362-73. PMID: [23785149](#). **IHC-F (mouse)**
26. Danjo T et al. Subregional specification of embryonic stem cell-derived ventral telencephalic tissues by timed and combinatorial treatment with extrinsic signals. [J Neurosci.](#) 2011 Feb 2;31(5):1919-33. **IHC (mouse)**
27. Okado H et al. The transcriptional repressor RP58 is crucial for cell-division patterning and neuronal survival in the developing cortex. PMID: [19409883](#). **IHC-F (mouse)**
28. Arshad A et al. Extended Production of Cortical Interneurons into the Third Trimester of Human Gestation. *Cerebral Cortex*, Volume 26, Issue 5, 1 May 2016, Pages 2242–2256. <https://doi.org/10.1093/cercor/bhv074>. **IHC-F (human)**.
29. Komitova M et al. Hypoxia-induced developmental delays of inhibitory interneurons are reversed by environmental enrichment in the postnatal mouse forebrain. [J Neurosci.](#) 2013 Aug 14;33(33):13375-87. PMID: [23946395](#) **IHC-F (mouse)**
30. Cocas LA et al. Emx1-lineage progenitors differentially contribute to neural diversity in the striatum and amygdala. [J Neurosci.](#) 2009 Dec 16;29(50):15933-46. PMID: [20016109](#). **IHC-F (mouse)**
31. Esumi S et al. Method for single-cell microarray analysis and application to gene-expression profiling of GABAergic neuron progenitors. [Neurosci Res.](#) 2008 Apr;60(4):439-51. [18280602](#). **IF/IC (mouse)**
32. Maira M et al. Role for TGF- β superfamily signaling in telencephalic GABAergic neuron development. [J Neurodev Disord.](#) 2010 Mar;2(1):48-60. PMID: [20339443](#). **IHC-F (mouse)**

Related products

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