

**Table S3. A selection of genes regulated in E12.5 *Lmx1a-dr/dr* mouse embryos**

Gene symbol	Description	Fold-change	Log2-ratio	p-value
<b>Genes implicated in mdDA development/function</b>				
<i>Nr4a2</i>	Nuclear receptor subfamily 4 group A member 2 (Nurr1)	0.59	-0.75	0.0020
<i>C130021120Rik</i>	Putative uncharacterized protein	0,64	-0,64	0.0002
<i>Lmx1a</i>	LIM homeobox transcription factor 1-alpha (LMX-1.1)	0.65	-0.61	0.0000
<i>TH</i>	Tyrosine 3-monooxygenase (Tyrosine 3-hydroxylase)(TH)	0.68	-0.56	0.0006
<i>Brunol6</i>	CUG-BP- and ETR-3-like factor 6 (CELF-6)(Bruno-like protein 6)	0.70	-0.51	0.0022
<i>Arx</i>	Homeobox protein ARX (Aristaless-related homeobox)	0.73	-0.46	0.0018
<b>Transcription factors</b>				
<i>Nr4a2</i>	Nuclear receptor subfamily 4 group A member 2 (Nurr1)	0.59	-0.75	0.0020
<i>Dtx3</i>	Protein deltex-3 (Deltex3) (mDTX3)	0.64	-0.64	0.0002
<i>Lmx1a</i>	LIM homeobox transcription factor 1-alpha (LMX-1.1)	0.65	-0.61	0.0000
<i>Pa2g4</i>	Proliferation-associated protein 2G4	0.68	-0.56	0.0012
<i>Thra</i>	Thyroid hormone receptor alpha (Nr1a1)	0.68	-0.55	0.0002
<i>Pitx2</i>	Pituitary homeobox 2 (Paired-like HD transcription factor 2)	0.69	-0.53	0.0006
<i>Zzef1</i>	Zinc finger ZZ-type and EF-hand domain-containing protein 1	0.70	-0.50	0.0014
<i>Bat2</i>	Large proline-rich protein BAT2 (HLA-B-associated transcript 2)	0.71	-0.50	0.0020
<i>Arx</i>	Homeobox protein ARX (Aristaless-related homeobox)	0.73	-0.46	0.0018
<i>Cas1</i>	Zinc finger protein castor homolog 1 (Castor-related protein)	0.74	-0.43	0.0066
<i>Med25</i>	Mediator of RNA polymerase II transcription subunit 25	0.75	-0.41	0.0064
<i>Meis3</i>	Homeobox protein Meis3 (Meis1-related protein 2)	0.76	-0.40	0.0024
<i>Sf1</i>	Splicing factor 1 (Zinc finger protein 162)	0.76	-0.39	0.0044
<i>Cnot4</i>	CCR4-NOT transcription complex subunit 4	1.33	0.41	0.0034
<i>Lhx9</i>	LIM/homeobox protein Lhx9 (LIM homeobox protein 9)	1.34	0.42	0.0438
<i>Pou4f1</i>	POU domain, class 4, transcription factor 1 (Brn-3A)(Brn-3.0).	1,44	0.52	0.0044
<i>Rnf152</i>	RING finger protein 152	1.44	0.53	0.0060
<i>Pbx1</i>	Pre-B-cell leukemia transcription factor 1 (Homeobox protein PBX1)	1,77	0.82	0.0000
<i>Usf1</i>	Upstream stimulatory factor 1 (Major late transcription factor 1)	1.82	0.86	0.0012
<b>Homeodomain genes</b>				
<i>Lmx1a</i>	LIM homeobox transcription factor 1-alpha (LMX-1.1)	0.65	-0.61	0.0000
<i>Pitx2</i>	Pituitary homeobox 2 (Paired-like HD transcription factor 2)	0.69	-0.53	0.0006
<i>Arx</i>	Homeobox protein ARX (Aristaless-related homeobox)	0.73	-0.46	0.0018
<i>Meis3</i>	Homeobox protein Meis3 (Meis1-related protein 2)	0.76	-0.40	0.0024
<i>Zfhx2</i>	Zinc finger homeobox 2	0.78	-0.36	0.0132
<i>Lhx9</i>	LIM/homeobox protein Lhx9 (LIM homeobox protein 9)	1.34	0.42	0.0438
<i>Pou4f1</i>	POU domain, class 4, transcription factor 1 (Brn-3A)(Brn-3.0).	1,44	0.52	0.0044
<i>Pbx1</i>	Pre-B-cell leukemia transcription factor 1 (Homeobox protein PBX1)	1,77	0.82	0.0000
<b>Axon guidance</b>				
<i>Vangl2</i>	Vang-like protein 2 (Van Gogh-like protein 2)	0.48	-1.06	0.0012
<i>Sema4g</i>	Semaphorin-4G Precursor	0.74	-0.43	0.0122
<b>Migration</b>				
<i>Dab1</i>	Disabled homolog 1	0.79	-0.34	0.0188