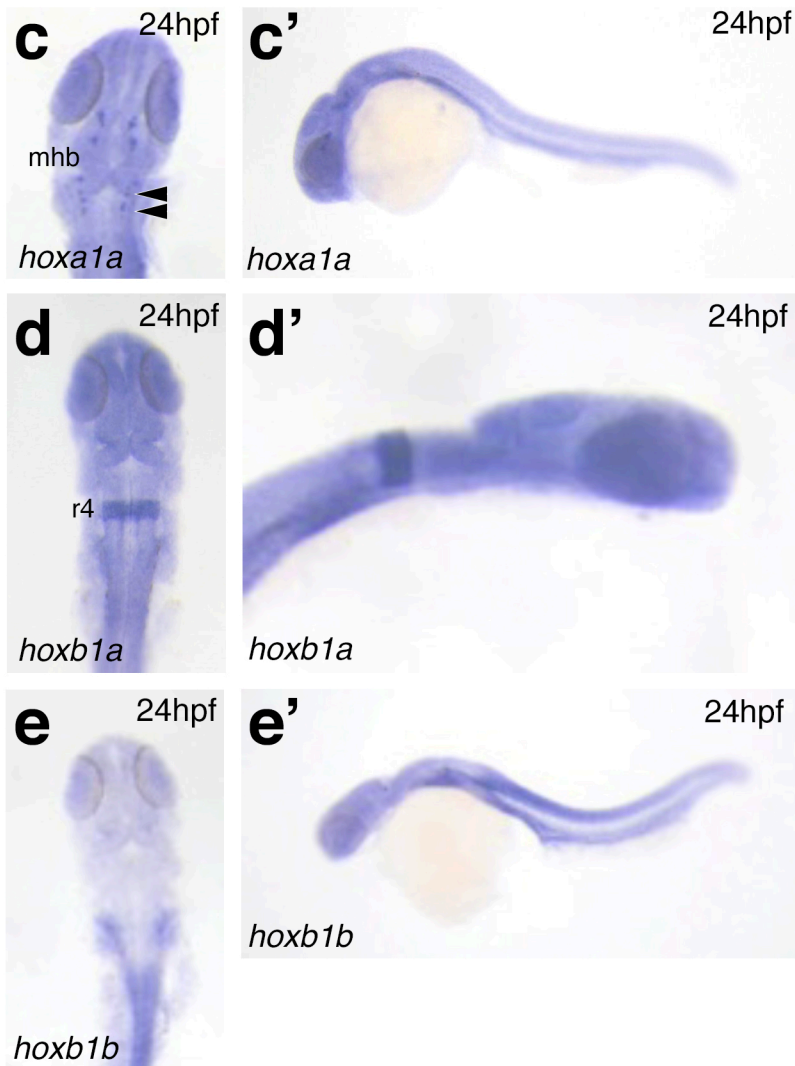
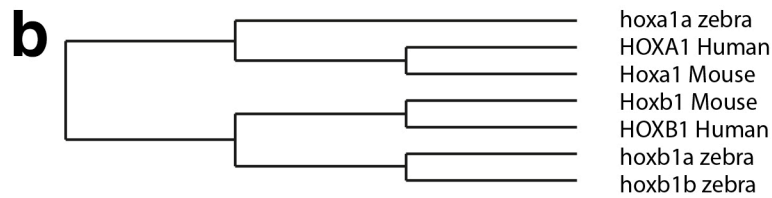
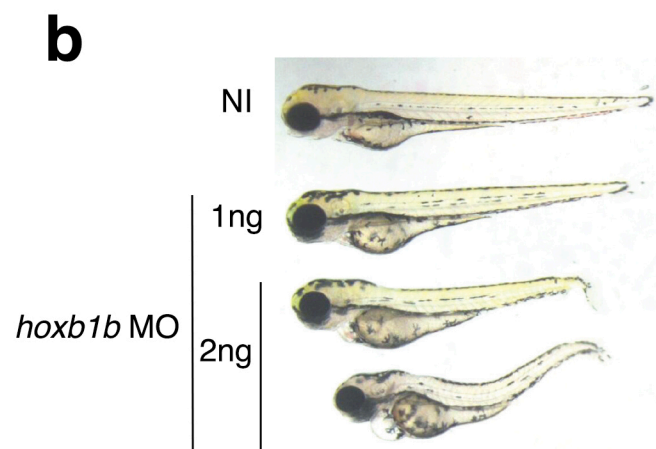
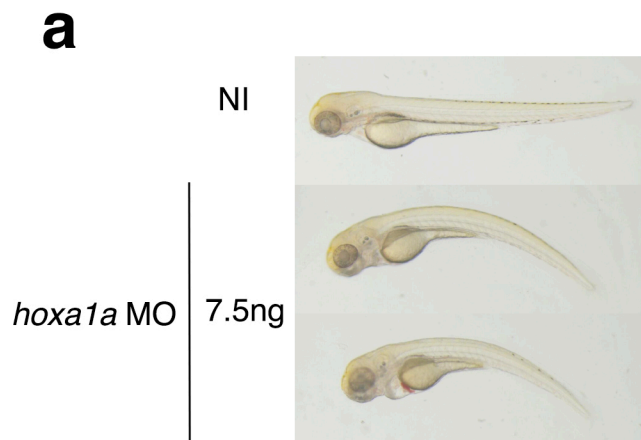


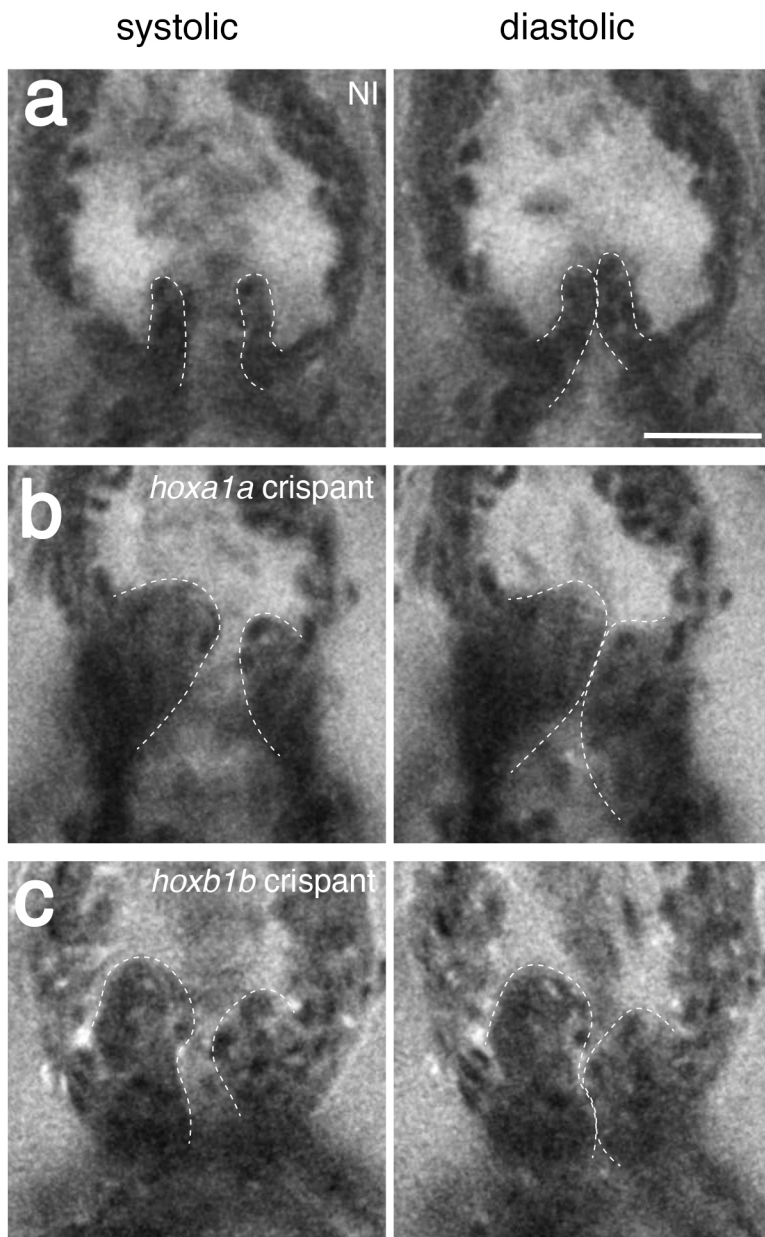
a	hoxa1a zebra	-----MSTFLDFSSIISGGDGGSGGSCSVRAFHGDHGLSTFQSSCAVRLNSCSGDERFMS	55
	HOXA1 Human	MDNARMNSFLEYPIILSS-----GDSGTCSARAYPSDHRITTFQ-SCAVSANS CGGDRFLV	55
	Hoxa1 Mouse	-----MNSFLEYPIILGS-----GDSGTCSARAYPSDHGITTFQ-SCAVSANS CGGDRFLV	50
	hoxa1a zebra	NISSQDV-----INSQPQAGSYQSPGTLSTITYS---AHPSYGTQSFCTGYNHIALN	104
	HOXA1 Human	GRGVQIGSP-HHHHHHHHPQATYQTSGLGVSYSHSSCGPSYGSQNFSAPIYSPYALN	114
	Hoxa1 Mouse	GRGVQISSPHHHHHHHHPQTATYQTSGLGISYSHSSCGPSYGAQNFSAPIYGPYGLN	110
	hoxa1a zebra	QDVESVSVPQCGPLVYSGNISSTVQHRHRHRYSSGNVHLHGQFQYGSATYGNSSDQA	164
	HOXA1 Human	QEADVSGGYPCAPAVYSGNLSPPMVQHHRHRYAGGAVGS---PQYIHHSYGQEHQS-	170
	Hoxa1 Mouse	QEADVSGGYPCAPAVYSGNLSPPMVQHHRHRYAGGTVGS---PQYIHHSYGQEQQT-	166
	hoxa1a zebra	NLTFVAGCSNPLSPLHVPHDACCSPISDGVPTGQTFDWMKVKNPPKTKGAGEYGFGGQ	224
	HOXA1 Human	--LALATYNNLSLPLHASHQEACRSPASETSSPAQTFDWMKVKNPPKTKGVGEYGLGQ	228
	Hoxa1 Mouse	--LALATYNNLSLPLHASHQEACRSPASETSSPAQTFDWMKVKNPPKTKGVGEYGVVGQ	224
	hoxa1a zebra	PNTVTRTNFSTKQLTELEKEFHFNKYLTRARRVEIAASLQLNETQVKIWFQNRMRMKQKKRE	284
	HOXA1 Human	PNAVRTNFTTKQLTELEKEFHFNKYLTRARRVEIAASLQLNETQVKIWFQNRMRMKQKKRE	288
	Hoxa1 Mouse	PNAVRTNFTTKQLTELEKEFHFNKYLTRARRVEIAASLQLNETQVKIWFQNRMRMKQKKRE	284
	hoxa1a zebra	KEGLLPKSLSEQKDGLEKTEDASEKSPSAPSTPSPSPIVEAYSNN--	329
	HOXA1 Human	KEGLLPISPAATPPGNDEKAESEKSSSSPVPSPGSSSDTLTTSH	335
	Hoxa1 Mouse	KEGLLPISPAATPPGSDEKTESEKSSSPSPSAPSPASSSDTLTTSH	331



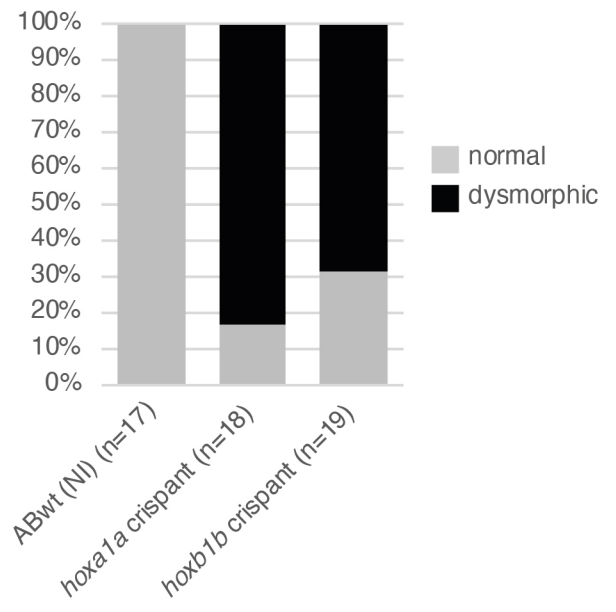
Extended data Figure 1



Extended data Figure 2



d



Extended data Figure 3

a

NI



hoxb1b MO 1.5 ng

hoxb1b MO 1.5 ng
+*hHOXA1* mRNA 25 pg

b

NI



hoxb1b MO 2 ng

hoxb1b MO 2 ng
+*hHOXA1* mRNA 25 pg

Extended data Figure 4

a

NI

WT^A 25 pg

+1His 25 pg

-3His^{Arg} 25 pg

-1His^{Arg} 25 pg

-1His 25pg



b

NI

-3His^{Arg} 1 pg

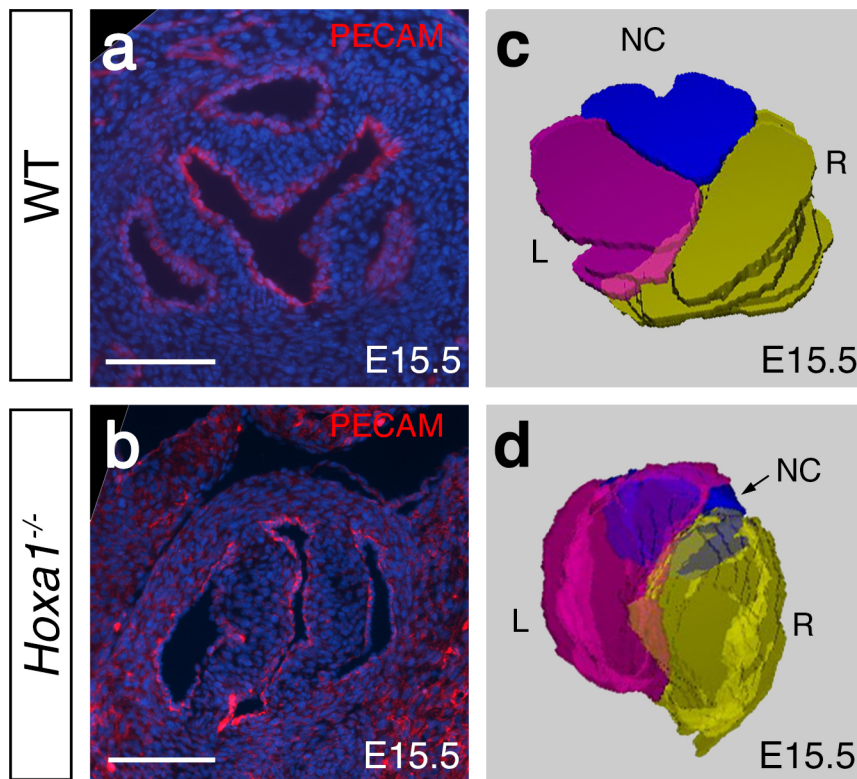
-3His^{Arg} 5 pg

-3His^{Arg} 10 pg

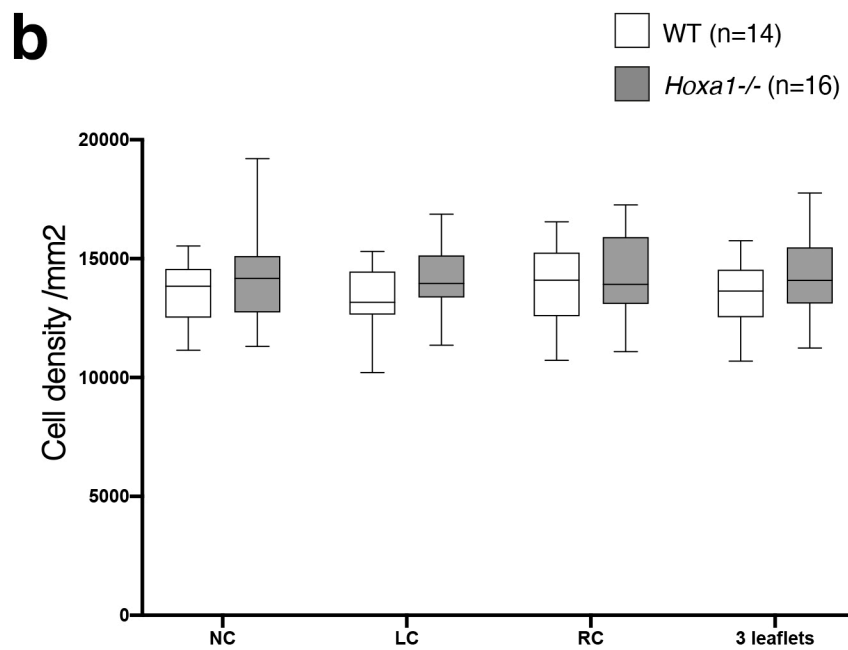
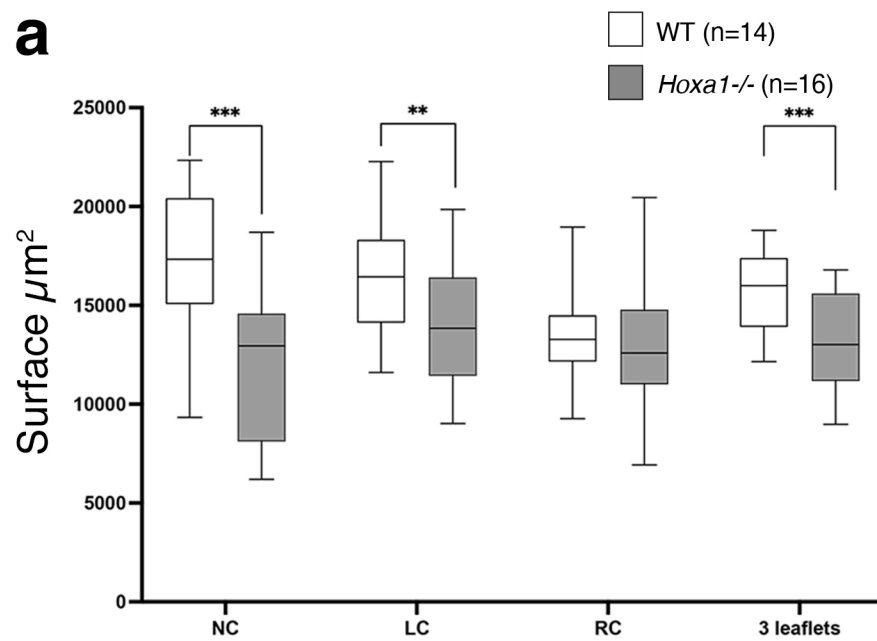
-3His^{Arg} 25 pg



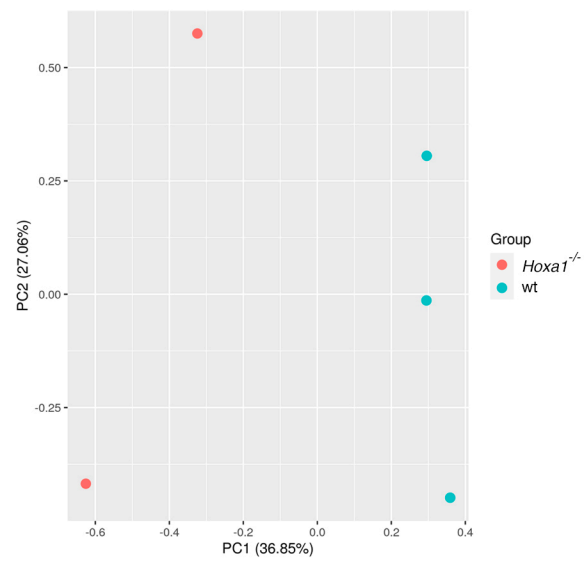
Extended data Figure 5



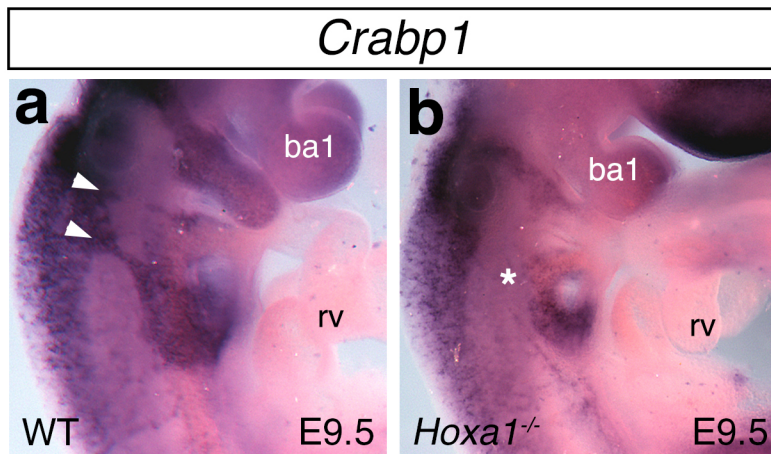
Extended data Figure 6



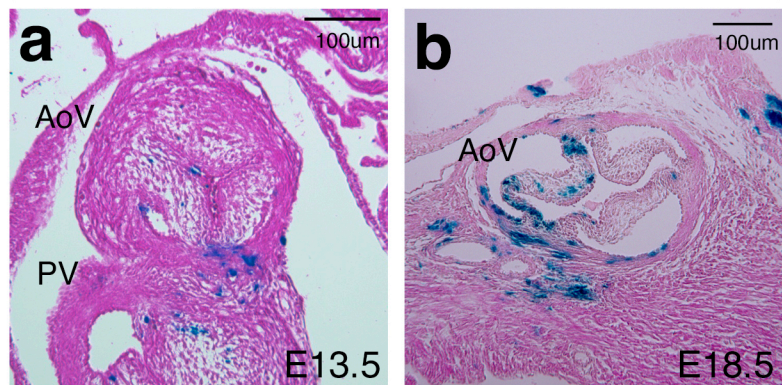
Extended data Figure 7



Extended data Figure 8



Hoxa1-enhIII-cre;R26R



Extended data Figure 10