

Table S1. Skeletal phenotypes associated with *Hoxa5* loss-of-function are reproduced following conditional deletion in LPM or somites at E18.5. Wild-type phenotypes are listed in bold font and *Hoxa5*-associated phenotypes in regular font. Abbreviations: TA, tuberculum anterior; T1, first thoracic rib; T2, second thoracic rib.

		LPM Δ				Somite Δ				Null			
		<i>Hoxa5</i> ^{fl/+ or fl/fl}		<i>Tg</i> ^{Prx1-Cre;} <i>Hoxa5</i> ^{fl/fl}		<i>Hoxa5</i> ^{fl/+ or fl/fl}		<i>Meox1</i> ^{Cre;} <i>Hoxa5</i> ^{fl/fl}		<i>Hoxa5</i> ^{+/+}		<i>Hoxa5</i> ^{-/-}	
Structure	Phenotype	#	%	#	%	#	%	#	%	#	%	#	%
C6	TA present	29	85%	22	81%	19	86%	19	37%	25	83%	4	15%
	TA absent	5	15%	5	19%	3	14%	33	63%	5	17%	22	85%
C7	Rib absent	33	97%	27	96%	22	100%	38	73%	30	100%	19	73%
	Rib present (all)	1	3%	1	4%	0	0%	14	27%	0	0%	7	27%
	Rib fused to T1	0	0%	0	0%	0	0%	6	12%	0	0%	0	0%
	Rib fused to sternum	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%
T1	Dorsal process absent	15	94%	14	100%	9	90%	9	41%	12	86%	2	17%
	Dorsal process present	1	6%	0	0%	1	10%	13	59%	2	14%	10	83%
Pre-sternum	T1 ribs fused symmetrically and anterior to manubrium ossification	17	100%	10	71%	11	100%	19	73%	14	93%	9	69%
	Asymmetric T1 rib fusion	0	0%	0	0%	0	0%	7	27%	1	7%	4	31%
	Extra sternum ossification anterior to T1	0	0%	4	29%	0	0%	0	0%	0	0%	0	0%
	Ossification flanking T1 attachment	0	0%	0	0%	0	0%	3	3%	3	10%	12	46%
Meso-sternum	Symmetrical sternebrae	17	100%	12	86%	10	90%	20	77%	14	93%	13	100%
	Crankshaft sternum	0	0%	2	14%	1	10%	6	23%	1	7%	0	0%
	Number of Animals (n)*	17		14		11		26		15		13	