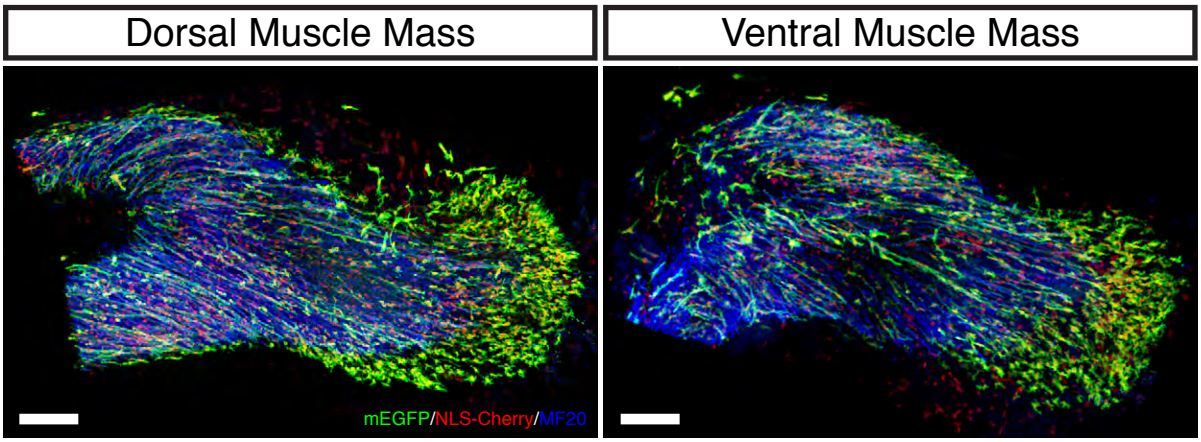
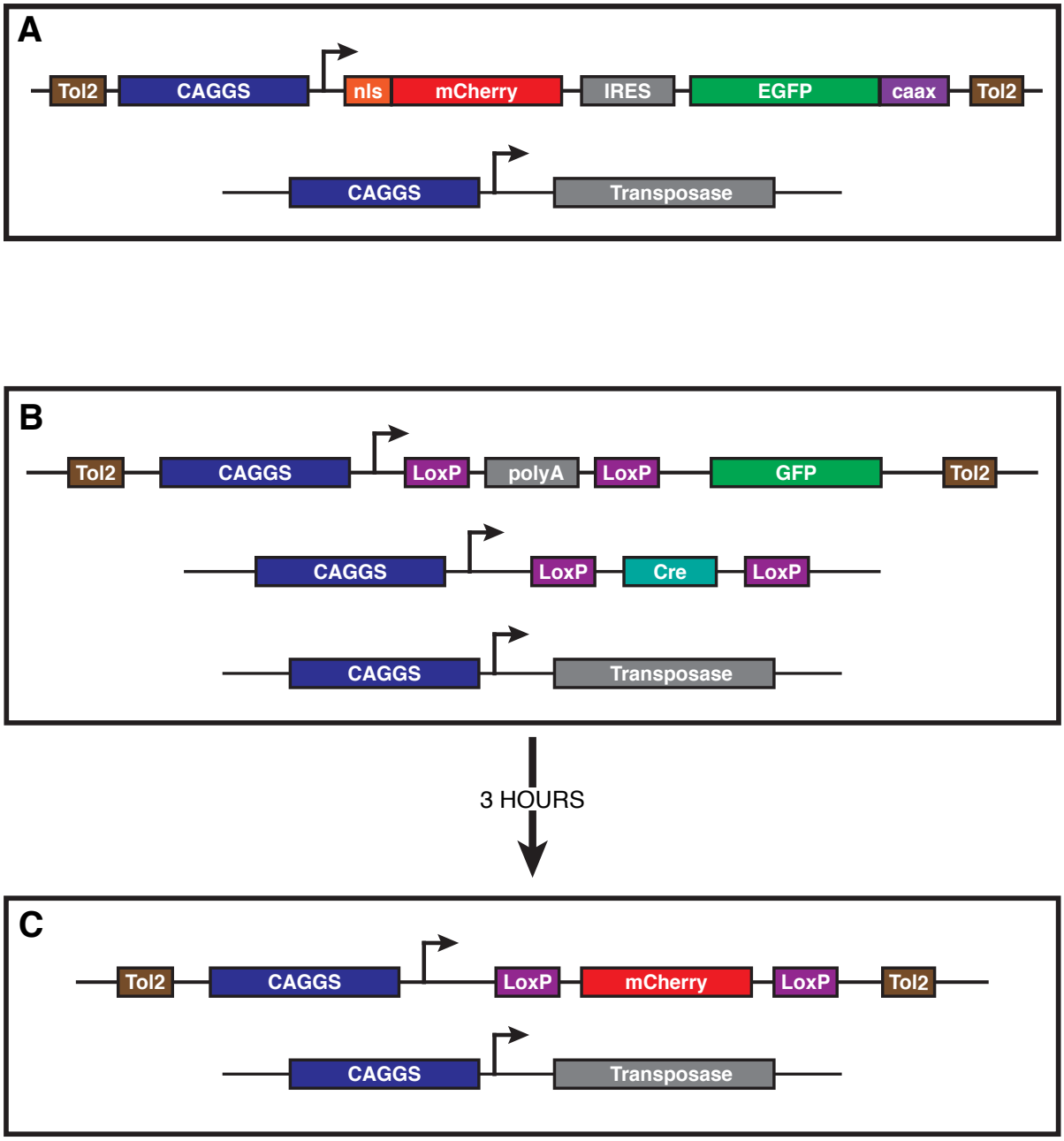


Supplementary Figure 1.

Dorsal and ventral muscle masses of a single E5.5 chick embryo forelimb co-electroporated at E2.5 in the VLL of somites in the forelimb region with EGFP (in green) and a nuclear form of mCherry (in red). In blue, immuno-staining against MyHC. This shows that the distribution of plurinucleated myofibers is similar in both muscle masses (longest fibers in the central domain, shortest at the periphery), while a cloud of mononucleated progenitors is present at the distal leading edge of both muscle masses.



Supplementary Figure 2.

(A): Vectors utilized to count the number of nuclei per fiber. (B,C): Description of the double-electroporation protocol aimed at mosaically labelling a cell population with two fluorochromes. B: First co-electroporation with two plasmids, that encode a self-excising Cre and GFP, downstream of a floxed poly(A) signal. When both plasmids are co-expressed, epithelial cells are GFP-positive. If only one plasmid is expressed, cells are not fluorescent. (C): 4 hours later, the DML is electroporated once more with a plasmid encoding a floxed mCherry. DML cells express the mCherry fluorochrome, unless they were previously electroporated with Cre, which inactivates mCherry. The self-excising Cre ensures that the Cre protein is only temporarily present; if mosaically-labeled cells do not fuse, myocytes will be either red or green, if they fuse, a proportion of them will be yellow.

Supplementary Table 1.
Count of nuclei per fiber observed at the indicated times after DML, dorsal dermomyotome and limb electroporation.

	E3.5	E4	E4.5	E5	E5.5	E6
DML EP						
	n=189		n=353		n=336	
1N	176		265		68	
2N	12		75		98	
3N	1		10		80	
4N			3		44	
5N					33	
6N					11	
7N					2	
Mean	1.1		1.3		2.8	
Dm EP						
			n=186		n=223	
1N			80		40	
2N			71		54	
3N			24		58	
4N			10		41	
5N			1		21	
6N					7	
7N					1	
8N					1	
Mean			1.8		2.9	
LIMB EP						
		n=115	n=59	n=207	n=238	n=128
1N		103	47	37	4	6
2N		9	11	50	21	7
3N		3	1	30	24	9
4N				32	31	15
5N				15	25	15
6N				15	36	14
7N				11	25	12
8N				4	18	9
9N				5	21	7
10N				3	12	7
11N				1	8	12
12N					2	12
13N					1	2
14N						1
15N					1	1
16N				1	1	
17N						1
Mean		1.1	1.2	3.6	6.1	6.7

Supplementary Table 2.

GFP (green), mCherry (red) and mixed (yellow) fibers after electroporation of the indicated somite sub-populations.

DML/DML 10hpe no Cre				
		Green	**Red**	**Yellow**
	Fibers Counted	48	26	101
	Percentage Mean	26.7	14.7	58.6
	Standard Deviation	8.1	6.3	13.0
DML/DML 10hpe control				
		Green	**Red**	**Yellow**
	Fibers Counted	226	215	24
	Percentage Mean	46.9	49.7	3.4
	Standard Deviation	18.2	18.8	4.7
DML/DML 72hpe				
		Green	**Red**	**Yellow**
	Fibers Counted	193	150	49
	Percentage Mean (Adj.)	49.7	42.2	8.2
	Standard Deviation	7.6	13.2	6.6
Dm/Dm 72hpe				
		Green	**Red**	**Yellow**
	Fibers Counted	83	69	88
	Percentage Mean (Adj.)	36.7	30.2	33.1
	Standard Deviation	4.6	7.3	6.4
DML/Dm 72hpe				
		Green	**Red**	**Yellow**
	Fibers Counted	91	77	28
	Percentage Mean (Adj.)	48.0	42.7	9.3
	Standard Deviation	8.1	8.2	11.2
DML/AL 72hpe				
		Green	**Red**	**Yellow**
	Fibers Counted	78	66	42
	Percentage Mean (Adj.)	43.3	36.6	20.1
	Standard Deviation	11.3	8.8	7.8
DML/PL 72hpe				
		Green	**Red**	**Yellow**
	Fibers Counted	78	64	38
	Percentage Mean (Adj.)	45.1	37.1	17.8
	Standard Deviation	5.4	5.5	5.1