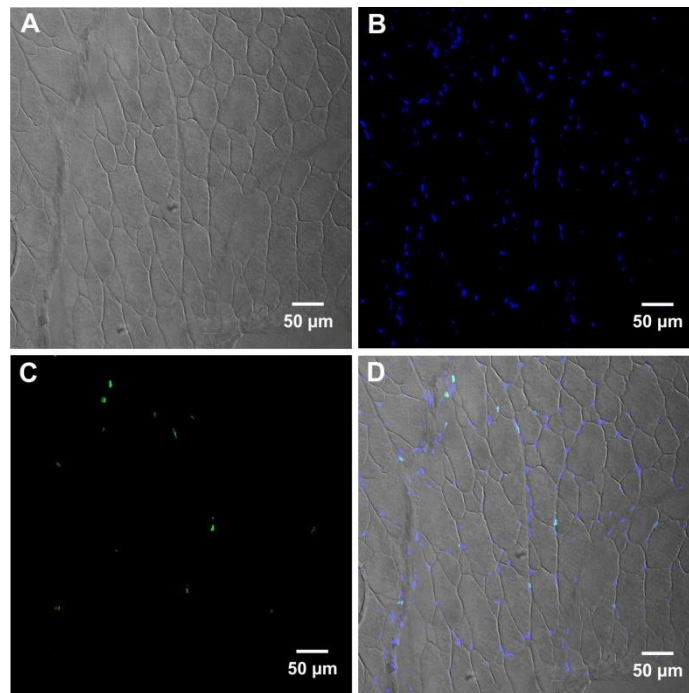


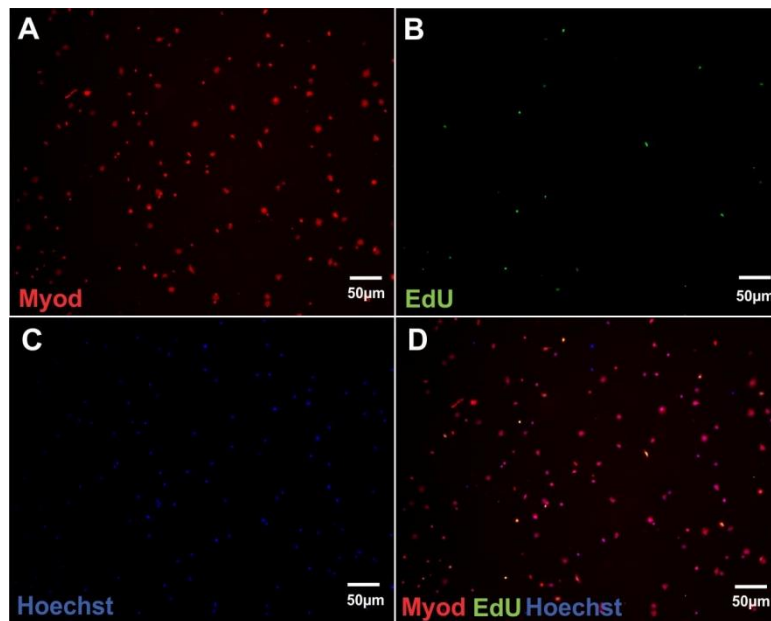


**Fig. S1. Hematoxylin-eosin stain of a juvenile pejerrey histological transversal section.** Distribution of myofibres and myomeres in a cross-section at position 1/4 of the total length starting from the tail (A). Representative myomere whose muscle fibers mean diameters ranges were found to correlate to the whole section outlined in red. Blue outline shows the red muscle fibers and the muscle involved on fin movement (dorsal and anal fins). (B) Muscle fibers of a myomere were outlined using the Image-Pro Plus 6.0 software.



**Fig. S2. Validation assay to label pejerrey muscle cell proliferation.**

Representative images of muscle pejerrey cryo-sections of white muscle from fishes (50 mm mean body length) 5 days after injections with EdU (75mg/Kg). (A) bright field, (B) labelled with Hoestch, (C) labeled *in vivo* with EdU, and (D) merge images A, B and C.



**Fig. S3. EdUco-localize with Myod immunodetection in isolated white muscle cells.**

Representative images of *in vitro*cultured mononucleated cells isolated from white muscle one day after injection with EdU. (A) Myod. (B) EdU. (C) Hoechst. (D) merge images A, B and C.

**Table S1.** Sequences of the primer pairs forward (F) and reversed (R) used for qPCR assays

Gene	Primer Sequence (5' to 3')
Oligo dT (16)	TTTTTTTTTTTTTTTTTT
qEF1F	TGGGTGCTGGACAAACTGAAG
qEF1R	CTGTGTCCAGGGGCATCAAT
IGF1-F	AACTGCGGCGCCTGGAAATG
IGF1-R	GTCTTGTCTGGCTGCTGTGCTGTC
qIGF2F	AGAGAACAGCCGAATAAAGGTCA
qIGF2R	TGCTGGTTGGCCTACTGAAAT
qPax7F	CACAAGATAGTGGAGATGGCC
qPax7R	ATCTTAGAGACGCAGCCGT
qMyoDF	CAAAGTGGAGATCCTGCG
qMyoDR	TCCCCGCTGTAGTGTTT
qMyf5F	TGCCATCCAATACATCGAA
qMyf5R	TTGTTTCCAGCCATGCC
qMyoGF	GGTGTGGTGTGGAGTG
qMyoGR	CCCTCCTTCCTTTTACACAG