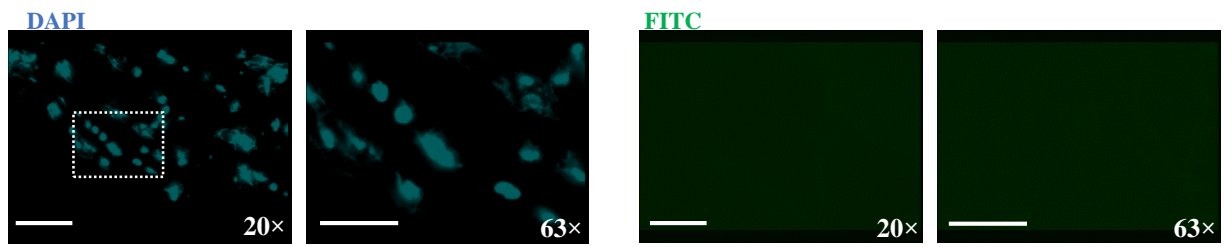
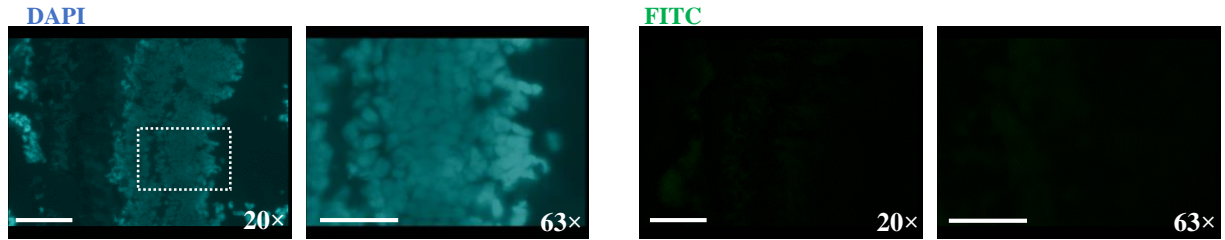


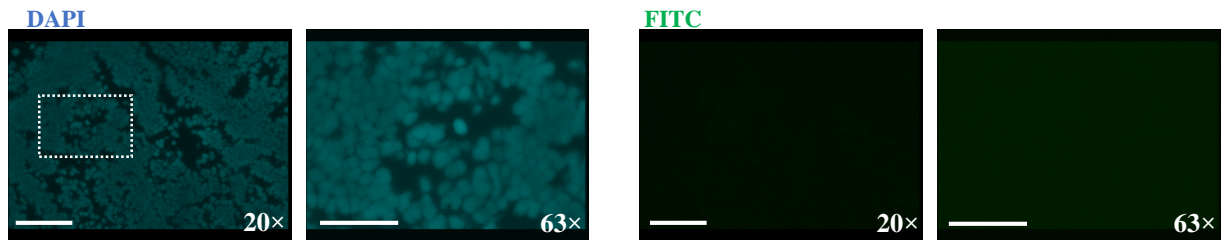
Muscle fibres



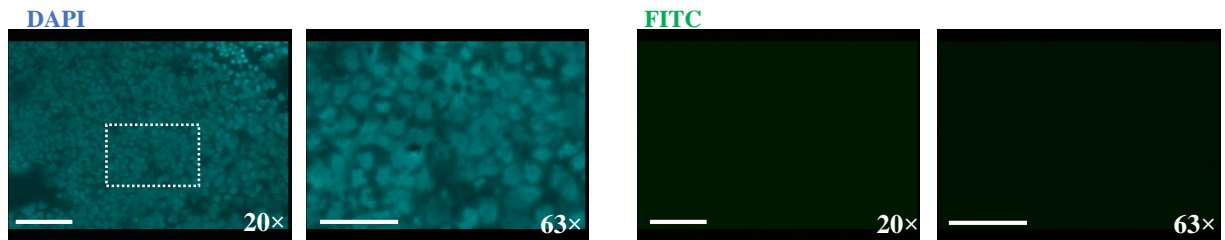
Eye



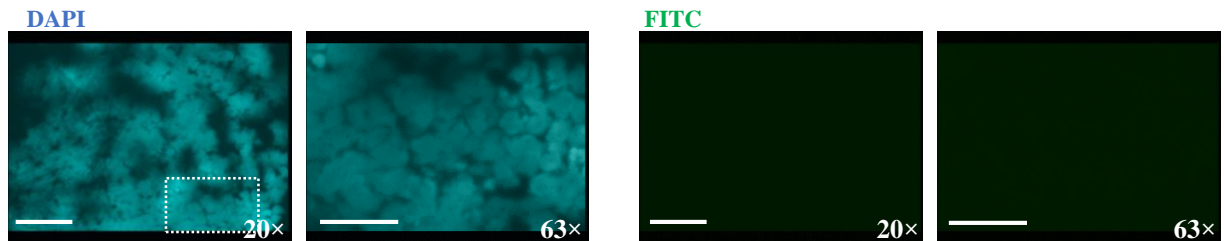
Brain



Liver



Pancreas



Intestine

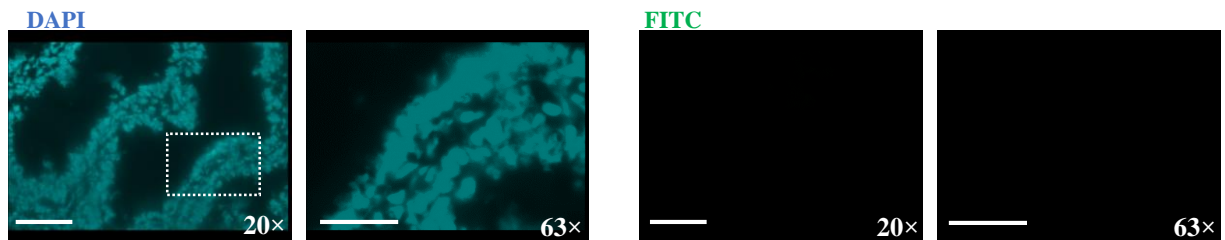
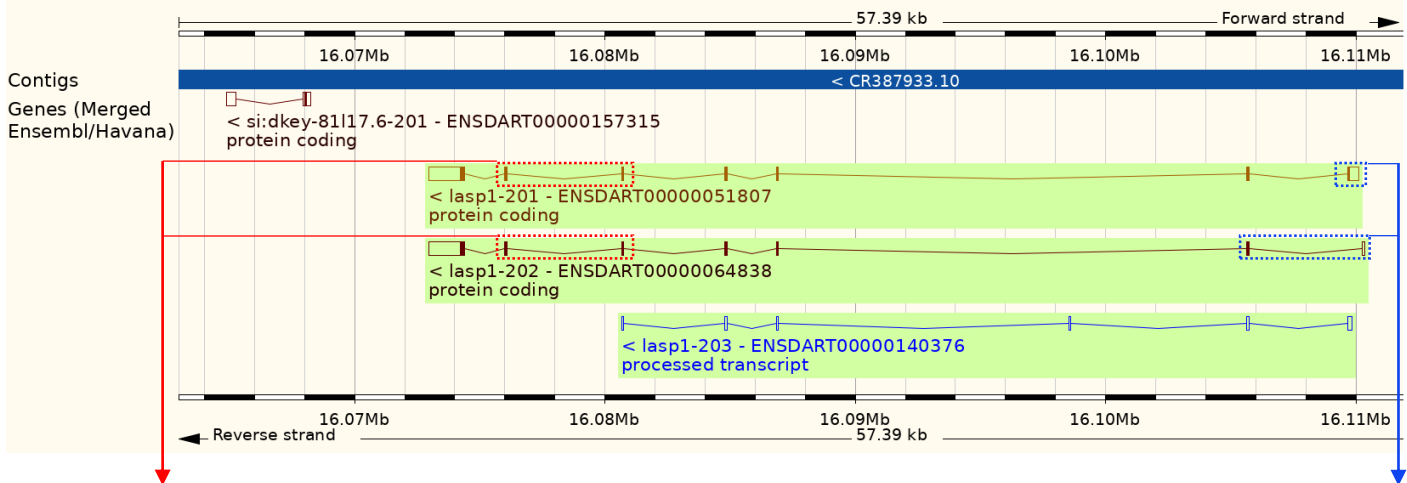


Figure S1. Negative control images for each selected tissue section of zebrafish. Magnification 20 \times and 63 \times (blue-DAPI, green-FITC). Scale bars are placed on the lower left corner of each image. They correspond to 100 μ m for 20x magnification and to 30 μ m for 63x magnification. █



Location of the PCR probe assay

lasp1-201 and *lasp1-202* - Exon 5

Start: 16,080,744 End: 16,080,660 Length: 85

Sequence:

ATTAAATACCATGAGGACTTTGAGAAGAGCCGAAGTGGAGGGG
 ACACCCCGCTCCCACTGACACCTCAACTAAACACACCTCCAG

lasp1-201 and *lasp1-202* - Exon 6

Start: 16,076,080 End: 16,075,992 Length: 89

Sequence:

CATATCCATCCTCGGCTGCATCCCAGAACTATCACTATGAGCC
 TGAGCCGGTGCCTCCAGCGGCTGCAGCTCCTCCTCCAGCTCT
 GGG

Location of the sequences targeted by morpholinos

lasp1-201 - Exon 1

Start: 16,110,100 End: 16,109,658 Length: 443

Sequence:

ACTCCCAATATGAGTATCACAGTATCCGCTTGACGGTGTGATTTTTAAAA
 CAAGTCAGCATTAAGTTAACGCTTCCATAACAACTTTAACTAATTGA
 ACTCAAAATCAGGACTTTTATCGATTTTAGATTGATATTAGATAGTGAAA
 GTCTTCCGCGGAATGCCCTTGCTTATCTGTGCACGTGAGCGCGCAGCAGG
 ACACAGCGGCAGAGCCGTGAGCGCGCCTTCCGCGTCTGCTTCGTTTCGCT
 GACAGCCAGCGGTGCGAACTGGACTCATCAACGGCTACAGATCCACACCT
 CAACAACACAACACTGCTTCTGCCGACCGAGTCTCGTTTCATCCCTTCG
 GCCTGTGTTATTATTCCTCCAAAATGAACCCGCTGTGTAGCAGATGTAA
 CCGAGTGTGTATCCCACGGAAAAAGTGAATTGTCTTGACAAG

lasp1-202 - Exon 1

Start: 16,110,351 End: 16,110,263 Length: 89

Sequence:

AAACCAAAACCAAAGCTCACGTTGAAGTATTTTTGGCGCATCCGATTCTGA
 AACTGACAATACTTTTCATTTTCATGCAGGAATGTGAATATG

lasp1-202 - Exon 2

Start: 16,105,731 End: 16,105,637 Length: 95

Sequence:

TACTGGCATAAAGGATGCTTTAGCTGTGAAGTCTGTAAGATGACTCTAA
 ACATGAAGAACTACAAAGGCTTTGAGAAGACCATACTGTAATGC

Figure S2. Schematic representation of the location for PCR probe assay and morpholinos. In the upper scheme, zebrafish *lasp1* transcripts are reported, including *lasp-201*, *lasp-202*, and *lasp-203*. *lasp-201* and *lasp-202* encode a proteins of 234 and 212 ammino acids, respectively; *lasp-203* is indicated as non-protein coding RNA (Ensembl Release 108). The PCR probe assay (assay ID Dr03439091, Thermo Fisher Scientific) overlaps the region in exons 5 and 6 and it is specific for *lasp-201* and *lasp-202*; the corresponding sequence is underlined in red. To knock-down Lasp1, two specific morpholinos are used targeting the translation start site of *lasp-201* and of *lasp-202*. The morpholinos target sequences are underlined in blue. Sequence in orange corresponds to 5'UTR, the translated sequence is indicated in grey.

Protein Alignment of human LASP1 and zebrafish Lasp1

Sequence 1: NP_006139.1 Gene: *LASP1* / 3927 HGNCID: 6513 Length: 261 Species: Homo sapiens
 Sequence 2: NP_997801.1 Gene: *lasp1* / 323216 ZFINID: ZDB-GENE-030131-1936 Length: 234 Species: Danio rerio

Alignment Length: 263 Identity: 179/263 - (68%)
 Similarity: 198/263 - (75%) Gaps: 31/263 - (11%)

```

Human   1  MNPNCARCGKIVYPTEKVNCLDKFVHKACFHCECTCKMTLNMKNYKGYEKKPYCNAHYPKQSFTMV 65
      |||.|:|.:.:|||||||:|.|.|.|||||||:|:|||||||.|||.|
Zfish   1  MNPLCSRNRVVYPTEKVNCLDKYWHKGCFSCEVCKMTLNMKNYKGFYKRPYCNAHYPKTSFTSV 65

Human   66  ADTPENLRRLKQQSELQSQVRYKEEFEKNKGKGFVSVVADTPELQRIKKTQDQISNIKYHEEFEKSR 130
      |||||:|.:.:|||||||:|.|.|.|||||||:|:|||||||.|||.|
Zfish   66  ADTPENLRRLKQQSKMQSQVLYKEEFEKNKGKGFVSVVADTPELQRIKKTQDQISNIKYHEDFEKSR 130

Human   131  MGPSGGEGMEPEERRDSQDGSYYRRPLEQQ--QPHHIPTSAPVYQQPQQQPVAQSYGGYKEPAAPV 193
      |||:  .|          .||..|  .|...:|  .:|:|...|..|.
Zfish   131  ---SGGD--TP-----LPLTPQLNTPPAYPSSA-----ASQNYHYEPEPVRPA 168

Human   194  SIQRSAPGGGGKRYRAVYDYSAADEDEVSFQDGDITVNVQQIDDGWMYGTVERTGDTGMLPANYV 258
      :  .:.|...|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|:|
Zfish   169  A--AAPPPSSGKRYRAVYDYTAADEDEVSFMDGDMIVDVQQIDEGWMYGRVERTGQQGMLPANYV 231

Human   259  EAI 261
      ||:
Zfish   232  EAM 234
    
```

Domain	Region	Identity
<u>LIM</u>	5..57	41/51 (80%)
<u>NEBU</u>	62..92	25/29 (86%)
<u>NEBU</u>	98..128	28/29 (97%)
<u>SH3</u>	203..261	48/57 (84%)

Figure S3. Alignment of human LASP1 and zebrafish Lasp1 protein sequence using DIOPT (version 8). Sequences for each domain are in green. The identity and the region of Lasp1 domains are indicated in the table. LIM, Lin11-Isl1-Mec3 domain; NEBU, Nebulin-repeats; SH3, Src homology 3 domain.