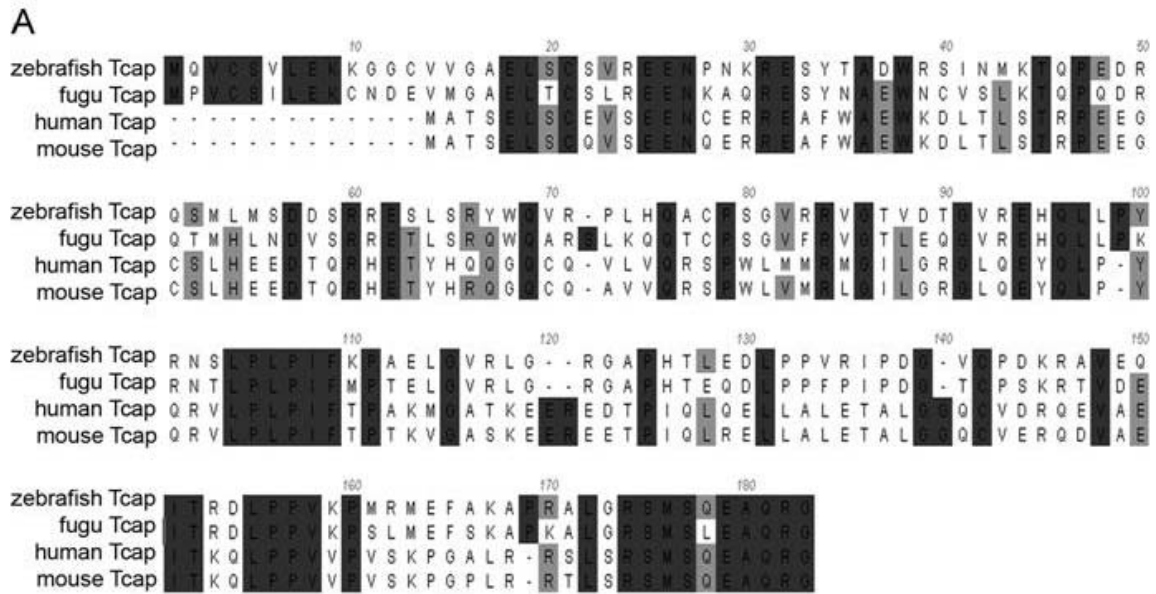


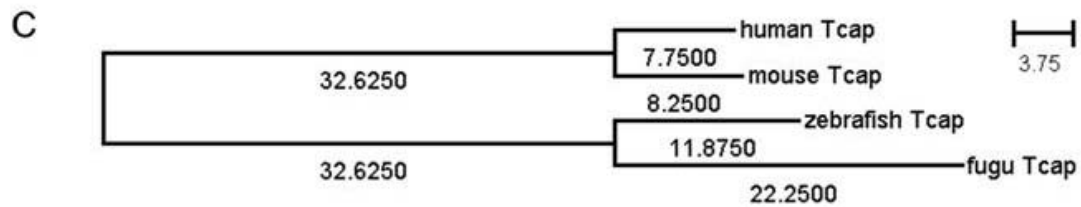
Supplemental material

Supplemental figure 1: (A) ClastW alignment of zebrafish, fugu, human and mouse Tcap peptide sequences. (B) Percentage of identities/similarities among zebrafish, fugu, human and mouse Tcap peptide sequences. (C) Phylogenetic analysis of zebrafish, fugu, human and mouse Tcap peptide sequences.



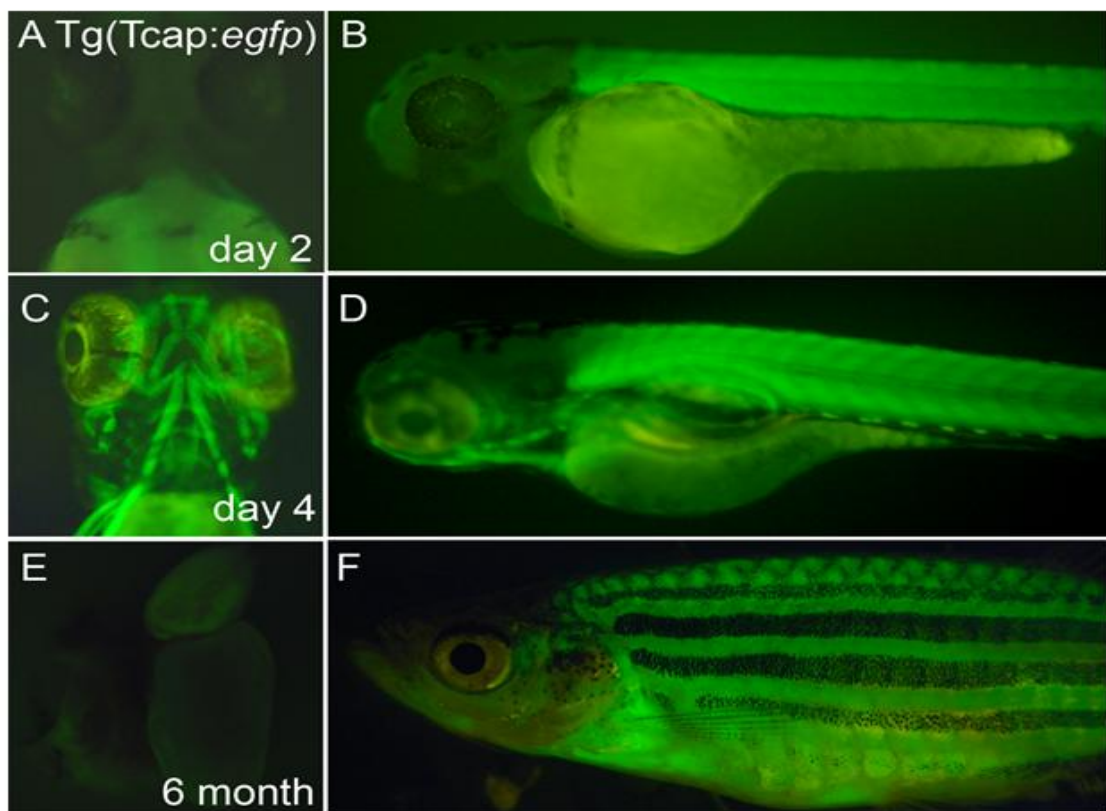
B

Identities/Similarities	zebrafish	fugu	human
fugu Tcap	65/76		
human Tcap	38/54	36/56	
mouse Tcap	39/57	38/59	82/88



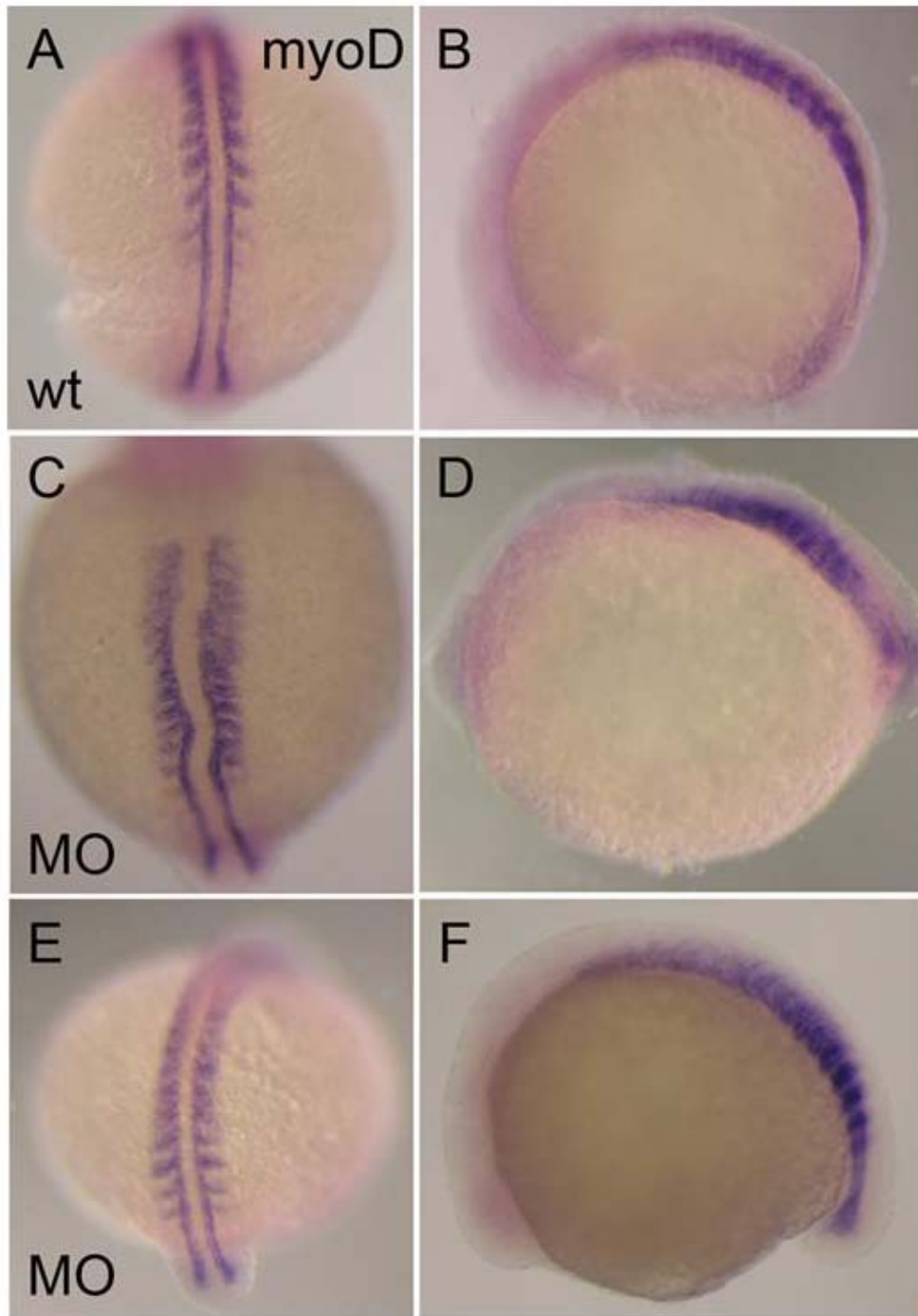
Supplemental Fig. 1

Supplemental figure 2: GFP expression profile of stable transgenic line Tg (Tcap: *egfp*) that contains a 2.5 kb promoter from *tcap*. Strong GFP expression is detected in skeletal muscles (B, D and F), but no expression or only weak expression are detected in the heart (A, C, and E) in both embryonic and adult stages.



Supplemental Fig. 2

Supplemental figure 3: Myocyte differentiation is undisrupted in the *tcap* morphants. *MyoD* expression in myoblast progenitor cells of *tcap* morphants (C-F) has similar pattern as in wild-type fish (A-B) at 10 S as revealed by *in situ* hybridization. A, C, E, dorsal view, anterior to the top. B, D, F, lateral view, anterior to the left.



Supplemental Fig. 3

Supplemental table 1: Relative expression levels of the *tcap* transcript at different embryonic stages and in adult organs, as revealed by quantitative RT-PCR. The values are normalized to that at 24 hpf, which was defined as one.

stage	relative level
14S	0.33
18S	0.23
21S	1.1
24h	1.0
48h	25
72h	12
96h	71
adult ventricle	6.0E5
adult atrium	7.9E5
adult quick muscle	9.1E4

Supplemental Table. 1

Supplemental table 2: *tcap* morphants can be rescued by co-injection of *tcap* RNA. A graphic summary of these data are presented in Figure 3E.

	normal	weak	severe	fish No.
MO (1 ng)	31.9%	25.6%	42.5%	113
RNA (30 pg)	91.9%	1.1%	7.0%	186
MO+RNA	90.0%	5.0%	5.0%	240
MO (2 ng)	36.1%	11.3%	52.6%	97
RNA (60 pg)	90.6%	0.0%	9.4%	223
MO+RNA	77.3%	17.0%	5.7%	88

Supplemental Table.2

Supplemental table 3: The percentage of cells with normal striations and cells with either weak or no stripes in different classes of *tcap* morphants. A graphic summary of these data are presented in Figure 6I.

	striped cell	weak or no stripe	total
normal	33		33
weak	38	1	39
severe	25	9	34

Supplemental Table. 3

Supplemental table 4: The percentage of cells with normal striations and cells with either weak or no stripes in control and anesthetized fish.

	striped cell	weak or no stripe	total
control	127		127
anesthesia	73	38	111

Supplemental Table. 4

Supplemental movie 1: Wild-type fish are sensitive to touch, while *tcap* morphants show a much slower response to touch and an abnormal swimming pattern.