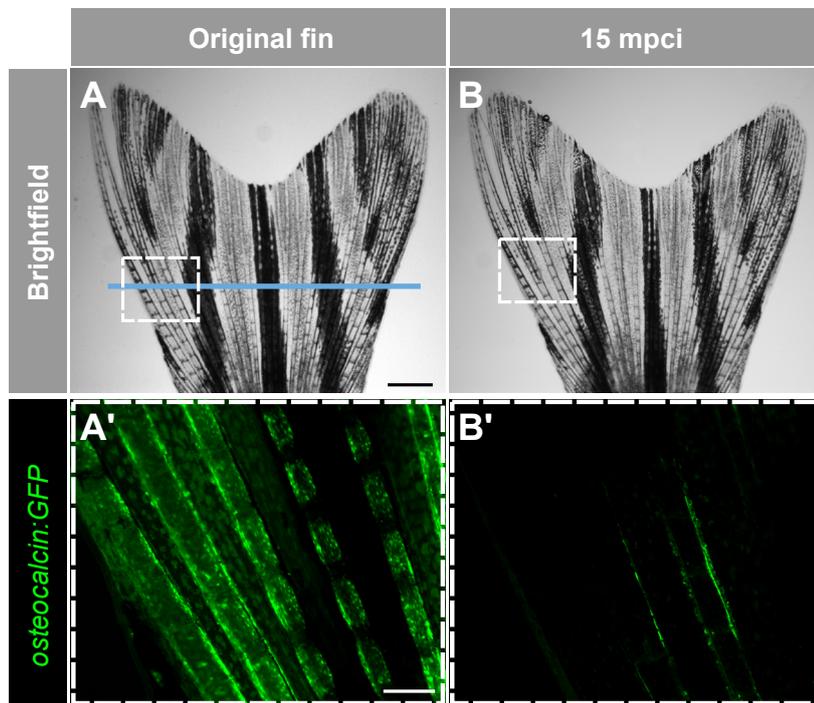


**Supplementary Fig. 1.**

**Cryoinjury damages endothelial cells of blood vessels, resulting in the interrupted blood supply in the fin.**

(A-C) Live-imaging of the vasculature in the *Tg(tie2:GFP)* fish. (A) Brightfield imaging of the original fin at 10 mpci, 6 hpci and 48 hpci. Cryoinjury plane is indicated with the blue line.

(B-C) Fluorescence imaging of the framed areas shown in the upper images respective the color code. Scale bar in (A) = 1 mm, in (B) = 100  $\mu$ m.



**Supplementary Fig. 2.**

**Damage of the mature osteoblasts along the cryoinjury plane.**

Live-imaging of mature osteoblasts along the bony rays of *Tg(osteocalcin:GFP)* fish.

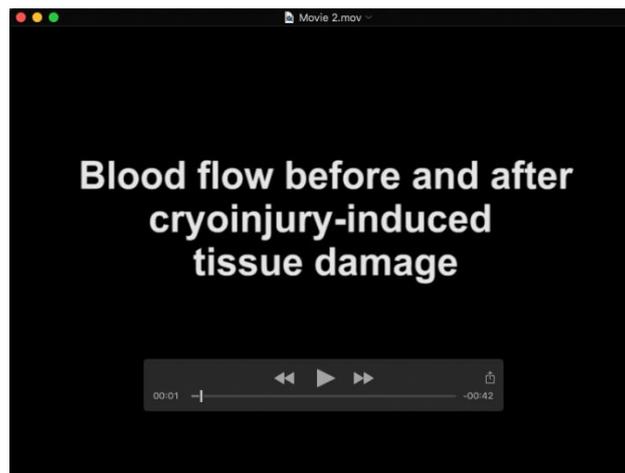
(A) Brightfield imaging of the same fin before injury and at 15 mpci. Cryoinjury plane is indicated with the blue line. (B) Fluorescence imaging of the framed areas shown in the upper images.

Scale bar in (A), 1 mm; in (B), 250  $\mu$ m.



**Movie 1. Progressive tissue degeneration after cryoinjury.**

Time-lapse imaging of the caudal fin every 2 hours within 24 hours after cryolesion. The cryoinjury plane is depicted as a blue line on the original fin. A decrease of pigmentation and a loss of soft inter-ray tissue precede breaking of bones and fin truncation.



**Movie 2. Cryoinjury results in an interrupted blood supply in the distal portion of the fin.**

Bright-field images of the same fin before cryolesion and at 1 hpci. Before cryoinjury, blood flow can be monitored at a higher magnification. The direction of the blood circulation is indicated with arrowheads (red, arteries, towards the distal end of the fin; blue, veins, towards the base of the fin). Imaging of the same region at 1 hpci does not detect any blood flow, indicating the interrupted circulation. Cryoinjury plane is depicted as a blue line.