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Marking the Otoliths of Hatchling Cod: A Method Comparison

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1 Introduction

The eastern Baltic cod population faces significant threats from various factors, creating the need for conservation measures. For evaluation of hatch-and-release endeavors to strengthen the population size, labeling fish larvae before the release is crucial for identification of recaptures.

This research explores diverse techniques for marking the otoliths of yolk-sac fish larvae, offering valuable insights for restocking initiatives in early fish life stages and other release-recapture studies.

2 Methods

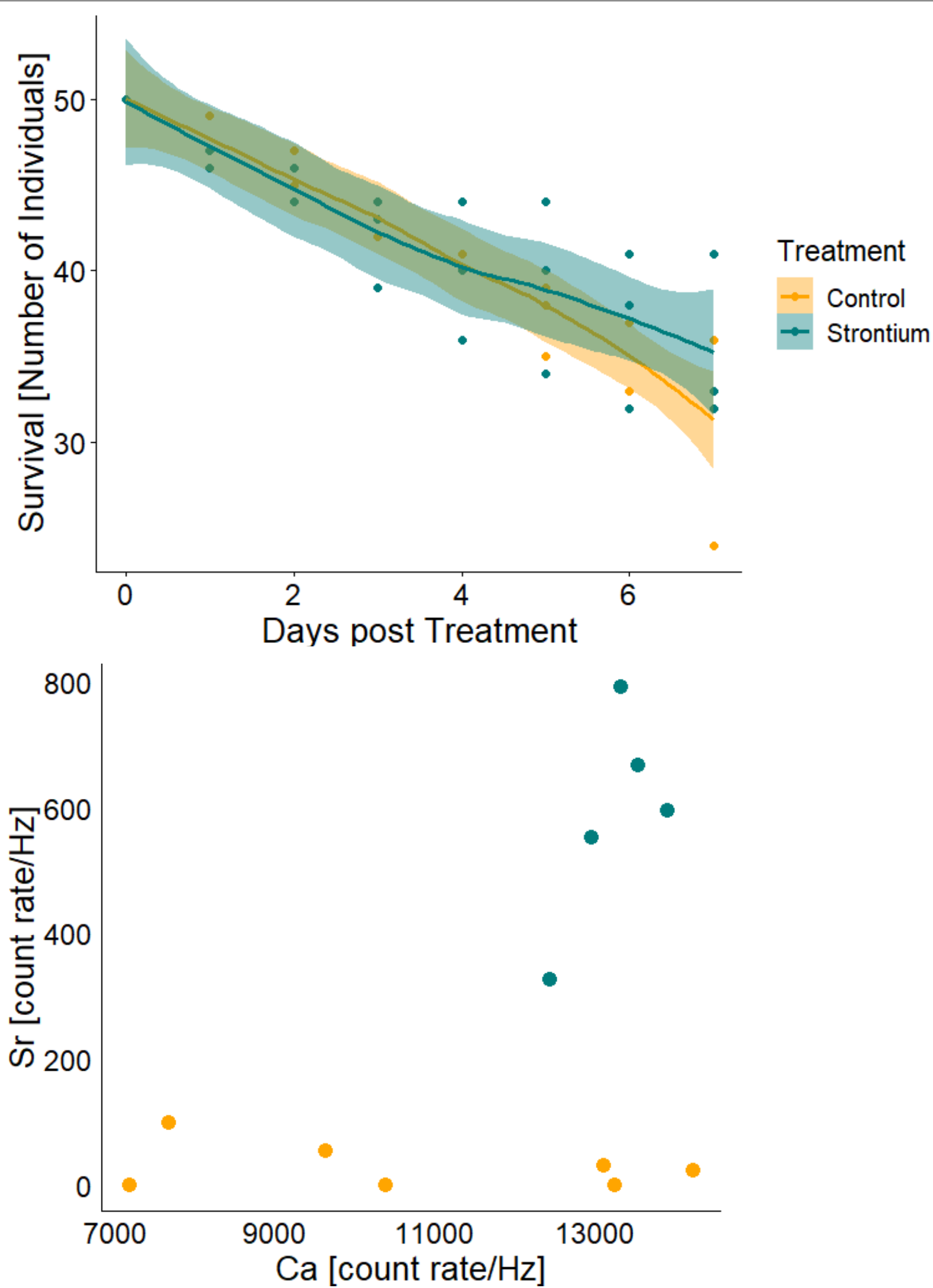
Newly hatched eastern baltic cod larvae (*Gadus morhua callarias*) were exposed to different treatments for 24h:

- Control: 7 °C, 17 psu
- Strontium chloride (1 g/L)
- Alizarin complexone (30 and 50 mg/L)
- Thermal (+2 °C, single and repeated exposure)

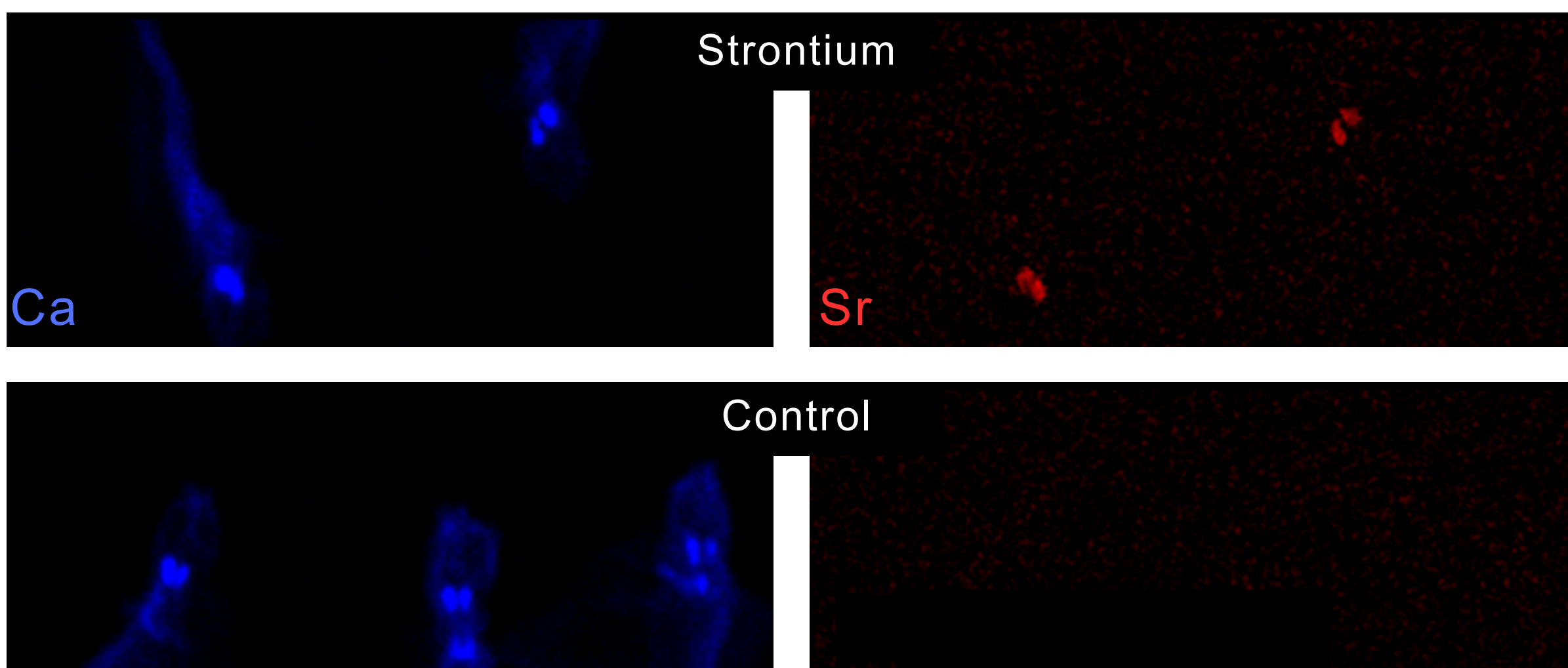
After the treatment, daily survival was measured for 7 days until the onset of the first-feeding stage.

To evaluate strontium signals, the fish larvae were scanned using a Bruker M4 Tornado micro-XRF spectrometer. Alizarin and thermal marks will be analysed with microscopy.

3 Results



The strontium treatment created marks in the fish larvae that are clearly distinguishable from unmarked larvae. This treatment showed no negative effects on survival.



4 Future Work

Next, strength of marks and lethal effects of the different alizarin complexone and thermal treatments will be evaluated to identify the most successful method to label yolk-sac fish larvae.



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