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# Sonic muscle activity during territorial defense and distress calls in the Lusitanian toadfish (*Halobatrachus didactylus*) [abstract]

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## **Abstract:**

Male Lusitanian toadfish, *Halobatrachus didactylus*, are territorial and have a wide acoustic repertoire. The sound production apparatus consists of a pair of intrinsic large sonic muscles on the two lobes of the swimbladder. Sonic muscle activity and the variability of the vocalizations were related using electromyograms (EMGs). EMG electrodes were surgically implanted on the sonic muscles of several territorial males. After recovery, the subjects were released into an experimental tank with an available nest. Sonic muscle activity was registered and the vocalizations were simultaneously recorded using a hydrophone. Social context was manipulated by releasing different kinds of intruders (male(s) or female(s)). This action elicited the production of boatwhistles, while grunts were generated during fish disturbance. Preliminary analysis shows that, unlike previously reported, the bilateral sonic muscles contract simultaneously during the generation of both signals. The muscle contraction period is halved during the production of the grunt relative to the boatwhistle. The EMG period matches the sound pulse period and determines the fundamental sound frequency.

Categories: [fish](#) [sound production](#)

## **Citation:**

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