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Authors: Paula Michelotti, Vanessa A. Quadros, Maria E.

Pereira, Denis B. Rosemberg

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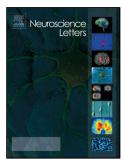
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# Ketamine modulates aggressive behavior in adult zebrafish

Paula Michelotti<sup>1</sup>, Vanessa A. Quadros<sup>1,2</sup>, Maria E. Pereira<sup>2,\*</sup> and Denis B. Rosemberg<sup>1,2,3,\*</sup>

<sup>1</sup> Laboratory of Experimental Neuropsychobiology, Department of Biochemistr and Molecular Biology, Natural and Exact Sciences Center, Federal University of Santa Maria. 1000 Roraima Avenue, Santa Maria, RS, 97105-900, Brazil.

<sup>2</sup>Graduate Program in Biological Sciences: Toxicological Biochemistry, Federal University of Santa Maria. 1000 Roraima Avenue, Santa Maria, RS, 97105-900, Brazil.

<sup>3</sup> The International Zebrafish Neuroscience Research Consortium (ZNRC), 309 Palmer Court, Slidell, LA 70458, USA.

## \*Correspondence to:

#### **Denis B. Rosemberg**

Department of Biochemistry and Molecular Biology, Natural and Exact Sciences Center, Federal University of Santa Maria. 1000 Roraima Avenue, Santa Maria, RS, 97105-900, Brazil. E-mail: dbrosemberg@gmail.com

#### Maria E. Pereira

Department of Biochemistry and Molecular Biology, Natural and Exact Sciences Center, Federal University of Santa Maria. 1000 Roraima Avenue, Santa Maria, RS, 97105-900, Brazil. E-mail: pereirame@yahoo.com.br
Highlights

- We investigated the modulatory role of ketamine on zebrafish aggression.
- Sub-anesthetic ketamine concentrations elicit biphasic effect on aggression.
- Ketamine promotes hyperlocomotion and circling behavior.
- Stereotypic behaviors impair the exploratory activity of zebrafish.

#### **Abstract**

Ketamine is a non-competitive glutamatergic antagonist that induces analgesia and anesthesia. Although ketamine displays anxiolytic and antidepressant properties, it may induce pro-psychosis and hallucinogen effects, as well as stereotypic behaviors following acute administration **at** sub-anesthetic doses. Since heightened aggression is maladaptive and may comorbid with various neuropsychiatric disorders, we aimed to investigate whether ketamine modulates aggressive behavior in adult zebrafish. Fish were acutely exposed to 2, 20, and 40 mg/L ketamine for 20 min and their locomotion, exploratory activity, and aggression towards

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