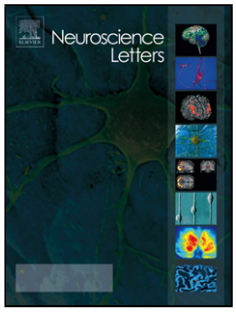

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PII: S0304-3940(18)30539-1
DOI: https://doi.org/10.1016/j.neulet.2018.08.009
Reference: NSL 33744

To appear in: *Neuroscience Letters*

Received date: 4-5-2018
Revised date: 19-7-2018
Accepted date: 9-8-2018

Please cite this article as: Michelotti P, Quadros VA, Pereira ME, Rosemberg DB, Ketamine modulates aggressive behavior in adult zebrafish, *Neuroscience Letters* (2018), https://doi.org/10.1016/j.neulet.2018.08.009

Ketamine modulates aggressive behavior in adult zebrafish

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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