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# ABSTRACTS

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## REGION-SPECIFIC EFFECTS OF VENLAFAXINE ON MONOAMINERGIC AND STRESS-RELATED SYSTEMS IN RAINBOW TROUT BRAIN

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**Abstract:** Venlafaxine, a serotonin norepinephrine reuptake inhibitor, is a common antidepressant found in our aquatic environment. However, very little is known about the effect of this pharmaceutical on fish brain performance. We tested the hypothesis that venlafaxine disrupts the brain monoaminergic system, as well as the transcript abundances of key markers of stress- and steroidogenesis-related genes in rainbow trout (*Oncorhynchus mykiss*). Fish were exposed to environmentally-relevant venlafaxine concentrations (0.2 ug/L and 1.0 ug/L) for 7 days. Venlafaxine clearly modulated the levels of noradrenaline (NA), serotonin (5HT), dopamine (DA) and their metabolites (5-hydroxyindoleacetic acid and 3,4-dihydroxyphenylacetic acid) in a region-specific manner in trout brain. This pharmaceutical also impacted the mRNA abundances of corticotropin-releasing factor, pro-opiomelanocortin, steroidogenic acute regulatory protein and glucose transporter 2 in distinct brain regions. Together, these findings suggest that venlafaxine effect on brain function are highly region-specific and may lead to the disruption of central homeostatic control systems.