**Brain levels of isotocin and vasotocin are related to status and social behaviour in a cooperatively breeding cichlid fish**

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The nonapeptide hormones oxytocin and vasopressin are potent regulators of social behaviour in mammals. In teleost fishes, the oxytocin and vasopressin homologues are isotocin (IT) and arginine vasotocin (AVT) respectively. The role of these nonapeptides in regulating social behaviour has received far less attention in fish than in mammals. However, the extraordinarily large number of extant teleost fish species, and the impressive diversity of their social systems provides a rich test-bed for investigating the role of nonapeptides in regulating social behaviour. Existing studies, mostly focused on AVT, have revealed relationships between the nonapeptides and both social behaviour and dominance status in fishes, although the direction of these relationships varies between species and experimental methodologies. To date, much of the work on endogenous nonapeptides in fish brains has measured genomic or neuroanatomical proxies of nonapeptide production rather than concentrations of these molecules in the brain. In the current study, we measure free biologically available AVT and IT in the brains of a highly social cichlid fish, *Neolamprologus pulcher* using high performance liquid chromatography with fluorescence detection. We found that brain AVT levels were higher in subordinate than in dominant animals, and levels of both AVT and IT correlated negatively with the level of social activity. We relate our results to previous data that have used other, indirect, proxies of nonapeptide levels in other species of fish.