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There is general consensus that low levels of brain serotonin are associated with aggression and social dominance. However, most of the studies investigating the relationship between serotonin (5-HT) and aggressive behavior have been performed in animals with previous social experience. Studies performed on socially naive animals, predisposed to different levels of aggression, are needed to investigate to which extent inherited differences in 5-HTergic transmission underlie this behavioral variability. In this work we show that rainbow trout larvae, having a large yolk during emergence from the spawning nests, also have higher probability to become social dominant. Furthermore, newly emerged socially naïve individuals with larger yolk also had lower brain 5-HT levels. This demonstrates a propensity to social dominance, which is associated with lower brain serotonin levels, in larvae that emerge from the spawning nests with a big yolk. Further studies utilizing this animal model may reveal inherited differences in 5-HTergic transmission underlying individual variation in aggressive behavior

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