Behavioral testing of zebrafish Symposium

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Zebrafish has been in the forefront of developmental biology for the past three decades and as a result numerous genetic tools have been developed for this species. Briefly, zebrafish has become the species of choice for geneticists along with the classical species of genetics, the fruit fly and the house mouse. Zebrafish, however, enjoys some advantages over these latter species that may make it appropriate particularly for translational research. Although it is small and almost as easy and cheap to keep in the lab as the fruit fly, it is a vertebrate species with anatomy, physiology, and brain function characteristics very similar to those of other vertebrates including our own. The high nucleotide sequence homology between zebrafish and human genes coupled with the ease of maintenance and prolific nature of this species will make zebrafish one of the most preferred model organisms in biomedical research. However, as far as understanding of its brain function and behavior is concerned, zebrafish is a rather novel organism. The bottleneck in behavior genetics and brain research with zebrafish is exactly this: without sophisticated behavioral methods and good understanding of brain function, analysis of the biology and genetics of brain and behavior function is difficult. The current symposium brings together four speakers from diverse areas of behavioral neuroscience and shows how zebrafish may be utilized. The pioneering work presented in the symposium suggests that zebrafish will indeed be useful in the analyses of diverse brain functions. Dr. Karlsson will talk about how one can measure sleep in different organisms and how zebrafish may advance our understanding of this important but still understudied brain function. Dr. Willemsen will discuss how zebrafish may be employed to investigate and model Parkinson's disease. Dr. Norton will present approaches as to how one can analyze mood disorders with zebrafish and Dr. Gerlai will show how automated behavioral test paradigms may be developed for the investigation of the effects of acute and chronic alcohol administration in zebrafish.

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