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The role of zebrafish larvae for studying anxiety-like behaviour

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**Propositions
(Stellingen)**

Yuvendran Muniandy

Accompanying Ph.D. dissertation

“The role of zebrafish larvae in studying anxiety-like behaviour”

1. The vastly different –omics technology should be hyphenated with different zebrafish based *in vivo* assays to improve the drug discovery process (**Chapter 2**).
2. Presence of locomotor suppression after exposure to anxiolytic drugs in zebrafish larvae may not necessarily represent putative anxiolytic effects (**Chapter 3**).
3. Larval zebrafish at a very young age (< 6 dpf) is at a critical time point of development; hence behavioural data of young larvae exposed to psychotropic drugs should be interpreted cautiously (**Chapter 4**).
4. A major hurdle in using zebrafish larvae and embryos in studying developmental toxicity is the difficulty in determining the effective concentration in the embryos and larvae. Understanding the body burden of these organisms is essential to translate zebrafish toxicity data into mammalian toxicity data (**Chapter 5**).
5. In addition to 2D behavioural analysis such as thigmotaxis, it is important to investigate the 3D movement of larval zebrafish in relation to anxiety-like behaviour.
6. Some zebrafish strains are innately anxious and are more suitable in studying anxiety-like behaviour.
7. The developmental toxicity of synthetic and herbal drugs should be evaluated thoroughly using different model organisms in pre-clinical studies.
8. Larval zebrafish are a good candidate in studying early-life stressors on the development of anxiety disorders.
9. The human brain is the most intriguing organ of all followed by the heart.
10. “...*Ask and it will be given to you, seek and you will find...*”, although this phrase has a theological background, asking questions and seeking persistently is the key to success in science.
11. The more scientific knowledge we acquire, the more intriguing nature gets.
12. Patience is a virtue.