

Autism and aggression: the possible relevance of zebrafish studies

Oana-Georgiana OPREA^{1*}, Alin CIOBICA^{1,2,3}, Eman H. RASHWAN⁴

¹Department of Biology, Faculty of Biology, Alexandru Ioan Cuza University, B dul Carol I, no 11, Iasi, Romania

²Academy of Romanian Scientists, Splaiul Independentei nr. 54, sector 5, 050094 Bucuresti, Romania

³Center of Biomedical Research, Romanian Academy, Iasi, B dul Carol I, no 8, Romania

⁴Department of Animal Hygiene and Management, Faculty of veterinary Medicine, Cairo University, Cairo, Egypt

* **Corresponding author:** Oana-Georgiana OPREA, mail: opreageorgiana801@yahoo.ro

Abstract

Autism spectrum disorder (ASD) is a complex neurodevelopment disease with multifactorial causes, which is characterized by a dramatic loss of the communication, social interaction and the repetition of actions. In this mini-review we did focus on the aggression part of the autistic pathology, and how this can be replicated in zebrafish experimental studies.

Keywords: autism, multifactorial causes; zebrafish; aggressivity; mirror reflection test; valproic acid.

Introduction- general aspects regarding the autistic spectrum disorder

1. Autism spectrum disorder (ASD)

1.1 History of disorder

Spectrum history originated in the early 20th century, when Eugen Bleuler described the case of a "disintegrating psychosis", attributing it to the "autism" nomenclature derived from the greek of : "autós" witch means: "self".(Sharma et al, 2018) Later, in the middle of the century, they were discovered and classified: Infantile autism by Leo Kanner in 1943 and highly functional autism by Hans Asperger at one year difference in 1944. In line with the details of the pathology described, connections were made to old works describing the same subject: in 1809 the study by John Haslan, in 1879 a similar case to the Asperger syndrome. (McPartland et al, 2012) One of the most popular similar cases was presented in 1798 by Victor de Aveyron dubbed the "French wild boy". A number of theories have been developed on the causes of the disease, leading to the conclusion of multi-factorial origin. (McPartland et al, 2012)(Wolff et al, 2004)