

## **Theme: Pre-clinical Research and Mechanisms of Disease**

### **EVALUATION OF THE EFFECT OF TAGETES ERECTA DRY EXTRACT IN A GENETIC ANIMAL MODEL OF AUTISM**

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#### **Abstract:**

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition characterized by persistent deficits in the ability to initiate and sustain reciprocal social interaction and social communication, and by a series of restricted, repetitive, and inflexible patterns of behavior and interests. Plants are the source of modern medicine and the most important elements of traditional medicine, such as *Tagetes erecta*. The flowers of *T. erecta* are rich in the carotenoid lutein, which has medicinal uses, including its depressant effect on the central nervous system (CNS). Plants can be used to increase the well-being of patients with autism, so we test a dry extract of *T. erecta* flowers as a promising therapeutic approach to relieving autistic symptoms.

A genetic animal model of autism, Nf1<sup>+/-</sup> mice, received feed enriched with 0.3% dry extract of *T. erecta* from postnatal day (P) 22 to P82 (60 days of treatment). At adulthood (+P70), behavioral testes, namely elevated plus maze (EPM; anxiety), open field (OF; locomotion) and three chamber social test (3CH; social behavior), were performed.

We observed that Nf1<sup>+/-</sup> mice treated with *T. erecta* have an increase in time and number of entries in the center of OF, similar to WT animals. Our results indicated that dry extract of *T. erecta* improved exploratory activity, which can be interpreted as a positive response to anxiety and an increased motivation to explore a new environment. However, no changes were detected in untreated and treated experimental groups regarding anxiety and social behavior.

It is concluded that the extract can potentially improve anxious/motivational behavior, however it is necessary to evaluate more behavioral parameters (in progress).

**Keywords:** Autism, *Tagetes erecta*, behaviour.