Review of: "Neurotherapeutic Comparison of Aripiprazole and Ethanolic Extract of Fragaria Ananassa on Cerebrum and Amygdala of Methamphetamine Intoxicated Male Wistar Rats"

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Potential competing interests: No potential competing interests to declare.

The study is predicated on the urgent need to find effective treatments for neurotoxic damage caused by methamphetamine abuse, a significant public health issue. The choice of Fragaria ananassa (strawberry) ethanolic extract and aripiprazole for comparison is innovative and reflects a growing interest in the potential of natural products in neurotherapy. This premise is well-aligned with the current scientific endeavor to explore alternative and complementary therapies.

The experimental design involving male Wistar rats is a standard approach in preclinical neuropharmacological research, providing a controlled environment to assess the neurotherapeutic effects of treatments. Grouping and dosing strategies seem appropriate for the study's objectives, and the use of oxidative stress markers and neurobehavioral tests is relevant for evaluating neuroprotective effects. However, the study could benefit from a clearer explanation of the rationale behind the chosen doses and a more detailed description of the extraction process of Fragaria ananassa to ensure reproducibility. Additionally, the inclusion of a group treated with aripiprazole alone (Group D), without methamphetamine-induced damage, limits the direct comparison of the therapeutic effects between the extract and aripiprazole on methamphetamine-induced toxicity.

The reported results suggest that the ethanolic extract of Fragaria ananassa has neuroprotective effects against methamphetamine-induced damage, based on histological observations and the maintenance of oxidative stress markers. The significant weight gain in groups treated with the extract and aripiprazole highlights a possible synergistic or additive effect, which is promising. However, the statistical analysis could be more robust. The use of ANOVA and Student's t-test is standard, but the study would benefit from post-hoc analyses to clarify which specific groups differ significantly. Moreover, the lack of significant differences in oxidative stress markers across groups warrants further discussion, as this could imply either a limitation in the markers chosen or the doses used.