

PEER-REVIEW REPORT

Name of journal: *World Journal of Pharmacology*

Manuscript NO: 77176

Title: Evaluation of the antidepressant-like potential of silymarin and silymarin-sertraline combination in mice: highlighting the effects on behaviour, oxidative stress, and neuroinflammation

Provenance and peer review: Unsolicited manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05906528

Position: Peer Reviewer

Academic degree: MD

Professional title: Assistant Professor, Staff Physician

Reviewer's Country/Territory: United States

Author's Country/Territory: Nigeria

Manuscript submission date: 2022-04-18

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-05-02 16:55

Reviewer performed review: 2022-05-04 01:56

Review time: 1 Day and 9 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection

Re-review	[<input checked="" type="checkbox"/>] Yes [<input type="checkbox"/>] No
Peer-reviewer statements	Peer-Review: [<input checked="" type="checkbox"/>] Anonymous [<input type="checkbox"/>] Onymous Conflicts-of-Interest: [<input type="checkbox"/>] Yes [<input checked="" type="checkbox"/>] No

SPECIFIC COMMENTS TO AUTHORS

There is a vast need for novel/experimental therapeutic agents to treat depressive disorders. In this study, authors are assessing the role of silymarin in an animal model as a possible option for treatment of depressive disorders. Silymarin is a compound obtained from milk thistle seeds that is believed to have antioxidant properties. The authors have done a good job in assessing its role by sub-dividing the pertinent test categories including behavioral tests and various biochemical tests. Effects on inflammatory markers, lipid peroxidation, etc are documented well. The results showed that silymarin administered alone increased body weight without altering food intake, increased open field locomotor activity, rearing, and grooming; enhanced spatial working memory, and decreased both anxiety-related behaviours and behavioural despair. In addition to improvement in antioxidant status, and a decrease in lipid peroxidation, acetylcholinesterase activity, and inflammatory markers. Additionally, silymarin mitigated dexamethasone-induced behavioural, biochemical and morphological changes in relation to the cerebral cortex and hippocampus. The authors have made a decent case supporting the role of silymarin to be considered as an option for management of depression. Further trials are needed to replicate the findings.

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Reviewer's code: 05470236

Position: Editorial Board

Academic degree: MD, PhD

Professional title: Associate Professor, Chief Physician, Deputy Director

Reviewer's Country/Territory: China

Author's Country/Territory: Nigeria

Manuscript submission date: 2022-04-18

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-05-06 10:45

Reviewer performed review: 2022-05-09 07:10

Review time: 2 Days and 20 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection

Re-review	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

It is proved in this study that silymarin (alone) increased body weight, open field locomotor activity, rearing, and grooming in mice; it also enhanced spatial working memory while decreasing anxiety-related behaviours and behavioural despair. Silymarin also improved antioxidant status, while decreasing lipid peroxidation, acetylcholinesterase activity, and inflammatory markers. Silymarin is beneficial in mitigating dexamethasone-induced central nervous system and other related changes in mice. It is found that silymarin may be can employ mechanisms of action that go beyond neurotransmitter modulation.