

PEER-REVIEW REPORT

Name of journal: *World Journal of Psychiatry*

Manuscript NO: 67654

Title: BDNF and Inflammation in Depression: Pathogenic Partners in Crime?

Reviewer's code: 05395205

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Doctor, Postdoc

Reviewer's Country/Territory: China

Author's Country/Territory: United States

Manuscript submission date: 2021-04-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-20 03:18

Reviewer performed review: 2021-05-20 06:02

Review time: 2 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 Grade E: Do not publish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 checked="" type="checkbox"/> Grade A: Priority publishing <input 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 type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" 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

In this review manuscript (manuscript NO: 67654), the authors discussed the role of BDNF and inflammation in depression with a particular focus on pathogenic implications of their interaction. This topic is interesting. Some suggestions are listed as below: 1. In line 13, page 3, 'Brain-derived neurotrophic factor (BDNF)' should be 'BDNF' since it has already been mentioned in the main text. 2. What about the effect of environmental factors on BDNF production and inflammation? Please introduce potential environmental factors. This point should be discussed. 3. As the authors mentioned, BDNF can be expressed both peripherally and within the central nervous system. In the periphery, BDNF has been detected in the heart and spleen, expressed by myoblasts, dorsal root ganglion cells, vascular endothelial cells, leukocytes and is stored in platelets. In the part of BDNF IN DEPRESSION, however, it is not clear for readers which dysfunctional organs can most contribute to a reduction of BDNF in the blood? 4.

Can the expression of BDNF (both peripherally and within the central nervous system) be decreased in the elderly people or patients with other diseases? 5. It would be great if the authors point out the microglial brain-BDNF or astrocytic brain-BDNF in the main text, rather than overall expression of BDNF. 6. Microglia serve important physiological functions in learning and memory by promoting learning-related synapse formation through BDNF signaling (Microglia promote learning-dependent synapse formation through brain-derived neurotrophic factor, *Cell*, 2013). Emerging data has convincingly demonstrated the existence of sex-dependent structural and functional differences of microglia (Uncovering sex differences of rodent microglia, *Journal of Neuroinflammation*, 2021). Sex should be considered as a biological variable in the condition of depression (for example, sex hormones and the immune system). This point should be discussed in the revised manuscript. 7. In Figure 2, BDNF plays a negative regulatory role in resolving neuroinflammation, and high inflammation reduces BDNF

expression. Which is the cause and consequence in your perspective? 8. In the conclusion, the authors only mentioned anti-inflammatory effects of BDNF on microglia. However, BDNF can also be expressed by neurons and astrocytes.

PEER-REVIEW REPORT

Name of journal: *World Journal of Psychiatry*

Manuscript NO: 67654

Title: BDNF and Inflammation in Depression: Pathogenic Partners in Crime?

Reviewer's code: 05817430

Position: Peer Reviewer

Academic degree: PhD

Professional title: Academic Research, Research Scientist

Reviewer's Country/Territory: Iran

Author's Country/Territory: United States

Manuscript submission date: 2021-04-28

Reviewer chosen by: AI Technique

Reviewer accepted review: 2021-05-20 03:13

Reviewer performed review: 2021-05-30 03:54

Review time: 10 Days

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 type="checkbox"/> Grade B: Minor language polishing <input checked="" type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" 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



**Baishideng
Publishing
Group**

7041 Koll Center Parkway, Suite
160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
<https://www.wjgnet.com>

SPECIFIC COMMENTS TO AUTHORS

In the present paper the authors represent the "BDNF and Inflammation in Depression: Pathogenic Partners in Crime?". Overall, the topic of study is interesting. But, poor writing has made the paper to be ineligible in current form for publishing. Most sentences must be written in a better journal style. Besides, I have some comments for improve the manuscript which are listed as follows: The keywords should be corrected as follows: BDNF; Microglia; Neuroinflammation; Growth factors; Depression The figures are not in high resolution.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Psychiatry*

Manuscript NO: 67654

Title: BDNF and Inflammation in Depression: Pathogenic Partners in Crime?

Reviewer's code: 05395205

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Doctor, Postdoc

Reviewer's Country/Territory: China

Author's Country/Territory: United States

Manuscript submission date: 2021-04-28

Reviewer chosen by: Man Liu

Reviewer accepted review: 2021-09-04 09:26

Reviewer performed review: 2021-09-04 09:35

Review time: 1 Hour

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 checked="" type="checkbox"/> Grade A: Priority publishing <input 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
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

The authors have addressed my concerns.



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7041 Koll Center Parkway, Suite
160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com