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PEER-REVIEW REPORT

Name of journal: *World Journal of Gastroenterology*

Manuscript NO: 90586

Title: Comparative transcriptomic analysis reveals the molecular changes of acute pancreatitis in experimental models

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 00504545
Position: Peer Reviewer
Academic degree: MD, PhD
Professional title: Emeritus Professor
Reviewer's Country/Territory: Spain
Author's Country/Territory: China

Manuscript submission date: 2023-12-08

Reviewer chosen by: Huo Liu

Reviewer accepted review: 2023-12-22 09:47

Reviewer performed review: 2023-12-22 16:13

Review time: 6 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[Y] Grade A: Excellent [ ] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Scientific significance of the conclusion in this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No scientific significance
Language quality	[Y] Grade A: Priority publishing [ ] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[Y] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Re-review	[ ] Yes [Y] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous
	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

The purpose of this study is to investigate the shared molecular changes underlying the development of AP across varying severity levels. Methods: Acute pancreatitis was induced in animal models through treatment with caerulein alone or in combination with LPS. Additionally, transgenic C57BL/6J- hM3/Ptf1α(cre) mice were administered Clozapine N-oxide (CNO) to induce AP. Subsequently, we conducted RNA sequencing of pancreatic tissues and validated the expression of significantly different genes using the Gene Expression Omnibus (GEO) database. Results: Caerulein-induced AP showed severe inflammation and edema, which were exacerbated when combined with LPS and accompanied by partial pancreatic tissue necrosis. Compared with control group, RNA sequencing analysis revealed 880 significantly differentially expressed genes in the caerulein model and 885 in the caerulein combined with LPS model. KEGG enrichment analysis and Gene Set Enrichment Analysis (GSEA) indicated substantial enrichment of the Toll-like receptor (TLR) and NOD-like receptor signaling pathway, TLR signaling pathway, and NF-κB signaling pathway, alongside elevated levels of apoptosis-related pathways, such as apoptosis, P53 pathway and phagosome pathway. The significantly

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elevated genes in the TLR and NOD-like receptor signaling pathways, as well as in the apoptosis pathway, were validated through qRT-PCR experiments in animal models.

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Reviewer's code: 03477847
Position: Peer Reviewer
Academic degree: MD

Professional title: Associate Professor

Reviewer's Country/Territory: Turkey

Author's Country/Territory: China

Manuscript submission date: 2023-12-08

Reviewer chosen by: Huo Liu

Reviewer accepted review: 2023-12-27 23:38

Reviewer performed review: 2023-12-30 16:29

Review time: 2 Days and 16 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Novelty of this manuscript	[Y] Grade A: Excellent [ ] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No novelty
Creativity or innovation of this manuscript	[ ] Grade A: Excellent [Y] Grade B: Good [ ] Grade C: Fair [ ] Grade D: No creativity or innovation

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Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [Y] Minor revision [ ] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous
	Conflicts-of-Interest: [ ] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

Dear authors, First of all, I would like to congratulate you for this beautiful study. You can find my comments about the article below. There are some technical deficiencies in the article. 1. Key words are not written 2. Core type: unwritten 3. Conclusion part is not written 4. Limitations of the study were not mentioned 5. References are not written in accordance with the journal writing rules 6. All explanations of abbreviations are not written These deficiencies need to be completed. Kind Regards