

PEER-REVIEW REPORT

Name of journal: *World Journal of Gastrointestinal Oncology*

Manuscript NO: 81765

Title: Identification of tumor antigens and immune subtypes of hepatocellular carcinoma for mRNA vaccine development

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05115922

Position: Peer Reviewer

Academic degree: PhD

Professional title: Assistant Professor

Reviewer's Country/Territory: Thailand

Author's Country/Territory: China

Manuscript submission date: 2023-06-13

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-07-10 04:19

Reviewer performed review: 2023-07-17 02:04

Review time: 6 Days and 21 Hours

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|---|---|
| Scientific quality | <input checked="" type="radio"/> Grade A: Excellent <input type="radio"/> Grade B: Very good <input type="radio"/> Grade C: Good <input type="radio"/> Grade D: Fair <input type="radio"/> Grade E: Do not publish |
| Novelty of this manuscript | <input checked="" type="radio"/> Grade A: Excellent <input type="radio"/> Grade B: Good <input type="radio"/> Grade C: Fair <input type="radio"/> Grade D: No novelty |
| Creativity or innovation of this manuscript | <input type="radio"/> Grade A: Excellent <input checked="" type="radio"/> Grade B: Good <input type="radio"/> Grade C: Fair <input type="radio"/> Grade D: No creativity or innovation |

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| Scientific significance of the conclusion in this manuscript | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance |
| 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 checked="" type="checkbox"/> Accept (High priority) <input 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

This manuscript does an excellent job demonstrating significant tumor antigen and immune cells for mRNA vaccine.

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Manuscript NO: 81765

Title: Identification of tumor antigens and immune subtypes of hepatocellular carcinoma for mRNA vaccine development

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05562744

Position: Editorial Board

Academic degree: FACS, MD, PhD

Professional title: Professor, Senior Scientist

Reviewer's Country/Territory: Turkey

Author's Country/Territory: China

Manuscript submission date: 2023-06-13

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-07-19 06:49

Reviewer performed review: 2023-07-19 07:27

Review time: 1 Hour

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|---|---|
| Scientific quality | <input checked="" type="radio"/> Grade A: Excellent <input type="radio"/> Grade B: Very good <input type="radio"/> Grade C: Good <input type="radio"/> Grade D: Fair <input type="radio"/> Grade E: Do not publish |
| Novelty of this manuscript | <input checked="" type="radio"/> Grade A: Excellent <input type="radio"/> Grade B: Good <input type="radio"/> Grade C: Fair <input type="radio"/> Grade D: No novelty |
| Creativity or innovation of this manuscript | <input checked="" type="radio"/> Grade A: Excellent <input type="radio"/> Grade B: Good <input type="radio"/> Grade C: Fair <input type="radio"/> Grade D: No creativity or innovation |

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|---|--|
| Scientific significance of the conclusion in this manuscript | <input checked="" type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance |
| 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 checked="" type="checkbox"/> Accept (High priority) <input 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 type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous |
| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

In brief: AURKA, CCNB1, CDC25C, CDK1, TRIP13, PES1, MCM3, PPM1G, NEK2, KIF2C, PTTG1, KPNA2, and PRC1 were identified as candidate HCC antigens for mRNA vaccine development. Four immune subtypes (IS1-IS4) and five immune gene modules of HCC were identified that were consistent in both patient cohorts. The immune subtypes showed distinct cellular and clinical characteristics. IS1 and IS3 immune subtype showed immunologic "cold" and IS2 and IS4 immune subtype showed immunologic "hot" with up-regulation of immune checkpoints genes and immuno-genic cell death genes. IS1-related modules were identified by the WGCNA algorithm. Ultimately, Five hub genes (RBP4, KNG1, METTL7A, F12, and ABAT) were identified, which might be potential biomarkers for mRNA vaccines. The manuscript is very exciting however, I have some reservation regarding the format of the manuscript.,

1. Please include the workflow in to the main text rather than the supplementary material. It makes the manuscript hard to understand otherwise.
2. Major revision of the english language is required