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OPEN PEER REVIEW

Bioinformatics and Gene Expression Omnibus Analysis of Key Candidate Genes and Pathways Associated with Femoral Head Necrosis

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

1 comment · 6 Feb 2024

Referee 1 Reviewer

MAJOR REVISION 6 Feb 2024

The study addresses femoral head necrosis (FHN), with a focus on providing innovative approaches to FHN treatment and prevention. The research employs bioinformatics analysis and Gene Expression Omnibus (GEO) data to identify key genes and pathways related to FHN. Through the analysis of differentially expressed genes (DEGs) and functional enrichment, the study highlights associations with Mitogen-Activated Protein Kinases, interleukins, and other enzymes. The study concludes by suggesting a future research path that involves a detailed exploration of the specific roles played by FHN-associated genes and the potential therapeutic applications of natural compounds.

Comment 1: The article needs significant revision and grammatical corrections by a native editor.

Comment 2: In the abstract, aims are mentioned twice; this needs to be revised, and a general aim should be stated.

Comment 3: Specify the name of the dataset used in the abstract.

Comment 4: In the introduction, also include global statistics pertaining to the disease.

Comment 5: The introduction mentions several aims that need to be integrated into a single overarching aim, as articulating various separate objectives is not customary.

Comment 6: Several concluding paragraphs in the introduction need to be relocated to the Materials and Methods section.

Comment 7: The authors have poorly written the Materials and Methods section, making it challenging for the reader to gain a clear understanding of the methodology and data. It is strongly recommended that this section be fundamentally revised. Providing a clear pipeline will significantly assist in comprehending the methods.

Comment 8: In the data resources section, the number of samples from each class is not specified, and it is also mandatory to cite the original published article for the data.

Comment 9: In the preprocessing section, there is a typographical error in the name of the tool, and it also seems that the threshold chosen by the authors lacks scientific justification. Additionally, upon reanalyzing the data with this threshold, the results differ from those reported by the authors.

Comment 10: The discussion section of the article is too long. It is recommended that additional information be presented in a more concise summary.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:

The study addresses femoral head necrosis (FHN), a focus on providing innovative approaches to FHN treatment and prevention, the research employs bioinformatics analysis and Gene Expression Omnibus (GEO) data to identify key genes and pathways related to FHN. Through the analysis of differentially expressed genes (DEGs) and functional enrichment, the study highlights associations with Mitogen-Activated Protein Kinases and interleukins, and other enzymes. The study concludes by suggesting a future research path that involves a detailed exploration of the specific roles played by FHN-associated genes and the potential therapeutic applications of natural compounds.

Response: We sincerely appreciate the reviewer's insightful feedback on our study addressing femoral head necrosis (FHN). We are pleased that the reviewer acknowledges the innovative approaches we employed, including bioinformatics tools and analysis, to investigate key genes and pathways related to FHN.

#Comment 1: The article needs significant revision and grammatical corrections by a native editor.

Response: We have made a thorough revision and grammatical corrections were made as advised by the reviewer. Also English editing certificate is added.

#Comment 2: In the abstract, it has been mentioned twice aims that it needs to be revised, and a general aim should be stated.

Response: Revised as advised by the reviewer and a single general aim is provided in the Abstract section. The lines are highlighted with yellow colour.

#Comment 3: Specify the name of the dataset used in the abstract.

Response: Thank you pointing out this. As advised, the said dataset is mentioned in the abstract which is highlighted with green colour in the Abstract section.

#Comment 4: In the introduction, also include global statistics pertaining to the disease.

Response: As advised, we have added about the global statistics of FHN in the Introduction section. The lines are highlighted with turquoise colour.

#Comment 5: The introduction mentions several aims that need to be integrated into a single overarching aim, as articulating various separate objectives is not customary.

Response: We have integrated all the aims as advised by the reviewer. The revised sentences are highlighted with grey colour in the Introduction section.

#Comment 6: Several concluding paragraphs in the introduction need to be relocated to the Materials and Methods section.

Response: Relocated as advised. They are highlighted with yellow colour in the Materials and Methods section.

#Comment 7: The authors have poorly written the Materials and Methods section, making it challenging for the reader to grasp a clear understanding of the methodology and data. It is strongly recommended that this section be fundamentally revised. Providing a clear pipeline will significantly assist in comprehending the methods.

Response: As advised by the reviewer, the section is thoroughly revised. They are highlighted with yellow colour in the Materials and Methods section. Also a flowchart is added as Fig. 1 to make it clear, a flowchart is presented as Fig. 1.

#Comment 8: In the data resources section, the number of samples from each class is not specified, and it is also mandatory to cite the original published article for the data.

Response: As advised by the reviewer, the number of samples is included in the Data Resource section which is highlighted with grey colour. Moreover, the original published article for the data is cited as Ref. No. 12.

#Comment 9: In the preprocessing section, there is a typographical error in the name of the tool, and it also seems that the threshold chosen by the authors lacks scientific justification. Additionally, upon reanalyzing the data with this threshold, the results differ from those reported by the authors.

Response: As advised, the typos error is corrected as suggested by the reviewer. As advised by the reviewer, we have provided the scientific rationale for the choosing the thresholds used in the DEG analysis. They are highlighted with yellow colour in the Materials and Methods section.

#Comment 10: The discussion section of the article is too long. It is recommended to present additional information in a more concise summary.

Response: The Discussion section is shortened to 1285 words (1774 words earlier) and revised as advised by the reviewer. The revised sentences are highlighted with turquoise colour.

2 Revision 1

1 comment · 21 Apr 2024

Referee 1 Reviewer

ACCEPT 21 Apr 2024

Dear Editor,
I am pleased to recommend the manuscript titled “Bioinformatics analysis and GEO analysis of Key Candidate Genes and Pathways associated with femoral head necrosis” for acceptance.
I had the privilege of reviewing it, and I am satisfied with the revisions made in response to my comments.
The changes have addressed all of my concerns, and I find the revised manuscript to be compelling and well-prepared for publication.
I find this article a very interesting read and would happily recommend this article for acceptance.
Yours sincerely,