Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

Materials

Antibodies	Yes (indicate where provided: section/paragraph)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Yes(RNA extraction, library preparation, RNA-seq Quantitative real-time PCR validation qRT/PCR /paragraph8、9、13)	

Cell materials	Yes (indicate where provided: section/paragraph)	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID	Yes(Cell culture/paragraph 10)	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		n/a Primary culture was not involved in this study

Experimental animals	Yes (indicate where provided: section/paragraph)	n/a
Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		n/a No animal experiments were involved in this study
Animal observed in or captured from the field: Provide species, sex and age where possible		n/a No animal experiments were involved in this study
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		n/a No animal experiments were involved in this study

Plants and microbes	Yes (indicate where provided: section/paragraph)	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		n/a No plants were involved in this study
Microbes: provide species and strain, unique accession number if available, and source		n/a No microorganisms were involved in this study

Human research participants	**Yes (indicate where provided: section/paragraph)**	**n/a**
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Yes(Footnote/paragraph 35)	
Provide statement confirming informed consent obtained from study participants.	Yes(Study samples/paragraph 7)	
Report on age and sex for all study participants.	Yes(Study samples/paragraph 7)	

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		n/a This study has passed the Chinese ethical review and meets the requirements of clinical trials

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.		n/a Not provided in this study

Experimental study design (statistics details)	Yes (indicate where provided: section/paragraph)	n/a
State whether and how the following have been done**, or** if they were not carried out.	Yes(Study samples/paragraph 7)	
Sample size determination	Yes(Study samples/paragraph 7)	
Randomisation	Yes(Study samples/paragraph 7)	
Blinding		n/a Blinding was not involved in this study
Inclusion/exclusion criteria	Yes(Study samples/paragraph 7)	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory		n/a The results of clinical tests, cell tests and qPCR tests were consistent, No repeat test yet
Define whether data describe technical or biological replicates	Yes(qRT/PCR /paragraph13)	

Ethics	Yes (indicate where provided: section/paragraph)	n/a

Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Yes(Footnote/paragraph 35)	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		n/a No animal experiments were involved in this study
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		n/a No specimen and field samples were involved in this study

Dual Use Research of Concern (DURC)	**Yes (indicate where provided: section/paragraph)**	**n/a**
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		n/a This study has no dual purpose

Analysis

Attrition	Yes (indicate where provided: section/paragraph)	n/a
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.		n/a All samples meet the inclusion criteria

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Yes(Statistical analysis/paragraph 14)	

Data Availability	Yes (indicate where provided: section/paragraph)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.		n/a The main data of this study have been included in the original text
If data are publicly available, provide accession number in repository or DOI or URL.		n/a The main data of this study have been included in the original text
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		n/a The main data of this study have been included in the original text

Code Availability	Yes (indicate where provided: section/paragraph)	n/a
For all newly generated code and software essential for replicating the main findings of the study:		n/a This study does not involve
State whether the code or software is available.		n/a This study does not involve
If code is publicly available, provide accession number in repository, or DOI or URL.		n/a This study does not involve

Reporting

Adherence to community standards	Yes (indicate where provided: section/paragraph)	n/a
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals		

have their own policy about requiring specific guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.	ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication.	

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