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.	Method and Materials / paragraph1,2,3,4,6,7	

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		No Cell materials are used in the manuscript
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		No Cell materials are used in the manuscript

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		YES No laboratory animals are used in the manuscript
Animal observed in or captured from the field: Provide species, sex and age where possible		YES No laboratory animals are used in the manuscript
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		YES No laboratory animals are used in the manuscript

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)		YES No plants were used in the experiment
Microbes: provide species and strain, unique accession number if available, and source		YES No microorganisms were used in the experiment

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.	Method and Materials / paragraph1	

Provide statement confirming informed consent obtained from study participants.		The informed consent has been submitted to the ethics committee of the Second Affiliated Hospital of Harbin Medical University and passed the review
Report on age and sex for all study participants.	Table1	

Design

Study protocol	**Yes (indicate where provided:**	**n/a**
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		YES This study is not a clinical trial

Laboratory protocol	**Yes (indicate where provided:**	**n/a**
Provide DOI or other citation details if detailed step-by-step protocols are available.	Method and Materials/ paragraph4	

Experimental study design (statistics details)	**Yes (indicate where provided:**	**n/a**
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination	Method and Materials/ paragraph1	YES
Randomisation	Method and Materials/ paragraph1	
Blinding		YES Known pathological diagnosis before mass spectrometry
Inclusion/exclusion criteria	Method and Materials/ paragraph1	

Sample definition and in-laboratory replication	**Yes (indicate where provided:**	**n/a**
State number of times the experiment was replicated in laboratory	RESULTS/ paragraph1	

Define whether data describe technical or biological replicates	RESULTS/ paragraph1	

Ethics	**Yes (indicate where provided:**	**n/a**
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Method and Materials/ paragraph1	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		YES No laboratory animals are used in the manuscript
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Method and Materials/ paragraph1	

Dual Use Research of Concern (DURC)	**Yes (indicate where provided:**	**n/a**
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		YES This research is only published in this journal

Analysis

Attrition	Yes (indicate where provided:	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.	Method and Materials/ paragraph1	

Statistics	Yes (indicate where provided:	n/a
Describe statistical tests used and justify choice of tests.	Method and Materials/ paragraph11	

Data Availability	Yes (indicate where provided:	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	Footnote/Data accessibility	
If data are publicly available, provide accession number in repository or DOI or URL.	Footnote/Data accessibility	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Footnote/Data accessibility	

Code Availability	Yes (indicate where provided:	n/a
For all newly generated code and software essential for replicating the main findings of the study:		
State whether the code or software is available.	Method and Materials/ paragraph4,5,8,9,10,11	
If code is publicly available, provide accession number in repository, or DOI or URL.		All codes are obtained from using the R package help document

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 guidelines for publication.	

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