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, it is provided at Methods, "Western blotting" section.	

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, it is provided at Methods, "Cell culture" section.	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	There is no such experiment in the study.	n/a

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	There is no animal used in the study.	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	There is no animal used in the study.	n/a
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	There is no model organism in the study.	n/a

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)	There is no plant in the study.	n/a
Microbes: provide species and strain, unique accession number if available, and source	There is no microbe used in the study.	n/a

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, it is provided at Footnote, "Ethical Statement" section.	
Provide statement confirming informed consent obtained from study participants.	Yes, it is provided at Methods, "Sample collection" section, the 1st paragragh.	
Report on age and sex for all study participants.	Yes, it is provided at Methods, "Sample collection" section, the 1st paragragh.	

Design

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

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	There is no such design in the study.	n/a

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.		
Sample size determination	Yes, it is provided at Methods, "Sample collection" section	
Randomisation	There is no such experiment method in the study.	n/
Blinding	There is no such experiment method in the study.	n/
Inclusion/exclusion criteria	Yes, it is provided at Method, "Sample collection" section	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	Yes, it is provided at Method, "Statistical analysis" section.	
Define whether data describe technical or biological replicates	Yes, it is technical replicates, it is provided at Method section.	

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, it is provided at Footnote, "Ethical Statement" section.	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	There is no animal used in the study.	n/a
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Yes, it is provided at Method, "Sample collection" section.	

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	The study is not subject to dual use research of concern.	n/a

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.	Yes, it is provided at Method, "Sample collection" section.	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Yes, it is provided at Method, "Statistical analysis" section.	

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.	There is no such experiment method in the study.	n/a
If data are publicly available, provide accession number in repository or DOI or URL.	There is no such data in the study.	n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	There is no such data in the study.	n/a

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:		
State whether the code or software is available.	Yes, it is provided at Method, "Statistical analysis" section	
If code is publicly available, provide accession number in repository, or DOI or URL.	There is no code, DOI or URL about the software.	n/a

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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