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.	No antibody related experiments were carried out in this study.	n/a

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 Section:Methods/Paragraph : 1	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	No relevant experiments were carried out in this 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	No relevant experiments were carried out in this study.	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	No relevant experiments were carried out in this study.	n/a
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	No relevant experiments were carried out in this 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)	No relevant experiments were carried out in this study.	n/a
Microbes: provide species and strain, unique accession number if available, and source	No relevant experiments were carried out in this 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.	No human participants related studies were conducted.	n/a
Provide statement confirming informed consent obtained from study participants.	No human participants related studies were conducted.	n/a
Report on age and sex for all study participants.	No human participants related studies were conducted.	n/a

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.	No clinical trials were conducted.	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.	Yes It is disclosed in the DOI submitted.	

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.	No relevant experiments were carried out in this study.	n/a
Sample size determination	No relevant experiments were carried out in this study.	n/a
Randomisation	No relevant experiments were carried out in this study.	n/a
Blinding	No relevant experiments were carried out in this study.	n/a
Inclusion/exclusion criteria	No relevant experiments were carried out in this study.	n/a

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 The experiment was repeated three times under the	
Define whether data describe technical or biological replicates	technical replicates	

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.	No human participants related studies were conducted.	n/a
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	No experimental animals related studies were conducted.	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.	No specimen and field samples related studies were conducted.	n/a

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	Not involved.	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.	No specimen and field samples related studies were conducted.	n/a

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Yes Section:Methods/Paragraph : 8.1	

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.	No new dataset was created.	n/a
If data are publicly available, provide accession number in repository or DOI or URL.	No new dataset was created.	n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	No new dataset was created.	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:	No new code or software was generated.	n/a
State whether the code or software is available.	No new code or software was generated.	n/a
If code is publicly available, provide accession number in repository, or DOI or URL.	No new code or software was generated.	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.	Yes, Section Acknowledgement	
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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