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	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.		**n/a** No antibodies were used

Cell materials	Yes (indicate where	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		**n/a** No cellular material was used
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		**n/a** No cellular material was used

Experimental animals	Yes (indicate where	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
Animal observed in or captured from the field: Provide species, sex and age where possible		**n/a** No animal experiments
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		**n/a** No animal experiments

Plants and microbes	Yes (indicate where	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		**n/a** No Plants and microbes
Microbes: provide species and strain, unique accession number if available, and source		**n/a** No Plants and microbes

Human research participants	Yes (indicate where	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		**n/a** This article uses database resources
Provide statement confirming informed consent obtained from study participants.		**n/a** This article uses database resources
Report on age and sex for all study participants.		This article uses database resources

Design

Study protocol	Yes (indicate	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		**n/a** No clinical trials

Laboratory protocol	Yes (indicate	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.		No laboratory

Experimental study design (statistics details)	Yes (indicate	n/a
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination		n/a Not applicable
Randomisation		n/a Not applicable
Blinding		n/a Not applicable
Inclusion/exclusion criteria		n/a Not applicable

Sample definition and in-laboratory replication	Yes (indicate	n/a
State number of times the experiment was replicated in laboratory		**n/a** This article uses database resources
Define whether data describe technical or biological replicates		**n/a** This article uses database resources

Ethics	Yes (indicate	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		**n/a** This article uses database resources
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		**n/a** This article uses database resources
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** This article uses database resources

Dual Use Research of Concern (DURC)	Yes (indicate	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** No dual use research

Analysis

Attrition	Yes (indicate where	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** This article uses database resources

Statistics	Yes (indicate where	n/a
Describe statistical tests used and justify choice of tests.	page 6,line 16-20	

Data Availability	Yes (indicate where	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.		**n/a** This article uses database resources
If data are publicly available, provide accession number in repository or DOI or URL.		**n/a** This article uses database resources
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		**n/a** This article uses database resources

Code Availability	Yes (indicate where	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.		n/a Not applicable
If code is publicly available, provide accession number in repository, or DOI or URL.		n/a Not applicable

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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