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 (materials & methods / paragraph 2, line 121 & paragraph 4, line 134, 140-142 & paragraph 5, line 149-151 & paragraph 8, line 169, 170, 176-178, 180-182)	

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 lines used	n/a
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	No cultures used	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 laboratory animals used	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	No laboratory animals used	n/a
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	No model organisms used	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 plants used	n/a
Microbes: provide species and strain, unique accession number if available, and source	No microbes used	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 (materials & methods/ paragraph 1, line 115-117)	
Provide statement confirming informed consent obtained from study participants.	Yes (materials & methods/ paragraph 1, line 113-114)	
Report on age and sex for all study participants.	In vitro study using discarded tissue. No necessity to disclose such information.	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	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.	No laboratory protocols	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.	Yes (see below)	
Sample size determination	Materials & methods/paragraph 11, line 214-217	
Randomisation	Materials & methods/paragraph 2, line 118-119	
Blinding	Materials & methods/paragraph 10, line 202	
Inclusion/exclusion criteria	No samples were excluded 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 (Figure legends / Fig 1, line 533; Fig2, line 537; Fig 3, line 547; Fig 4 line 552 &556)	
Define whether data describe technical or biological replicates	No data describing technical or biological replicates	n/a

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 (material & methods/paragraph 1, line 115-117)	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	No animals studied	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 field samples	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	No dual use research	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 data excluded	n/a

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Yes (materials & methods/paragraph 11&12, line 210-220)	

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 data sets	n/a
If data are publicly available, provide accession number in repository or DOI or URL.	No publicly available data	n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	No reuse of publicly available data	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 generated, no software used	n/a
State whether the code or software is available.	No new code or software	n/a
If code is publicly available, provide accession number in repository, or DOI or URL.	No new code	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 guidelines for publication.	

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