

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](https://doi.org/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:	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Page4/ Line 10	
Cell materials	Yes (indicate where provided:	n/a
Cell lines: Provide species information, strain. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID		We didn't use cell lines.
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		We didn't use any culture.
Experimental animals	Yes (indicate where provided:	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		We didn't use any animal.
Animal observed in or captured from the field: Provide species, sex and age where possible		We didn't use any animal.
Model organisms: Provide Accession number in repository (where relevant) OR RRID		We didn't use any animal.
Plants and microbes	Yes (indicate where provided:	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		We didn't use plants.
Microbes: provide species and strain, unique accession number if available, and source		We didn't use microbes.
Human research participants	Yes (indicate where provided:	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page3/ Line 33-34, Page4/ Line 1	
Provide statement confirming informed consent obtained from study participants.	Page3/ Line 32-33	
Report on age and sex for all study participants.	Page3/ Line 31-32	

Design

Study protocol	Yes (indicate where)	n/a
For clinical trials, provide the trial registration number OR cite DOI in manuscript.	Page9/ Line 31-34	
Laboratory protocol	Yes (indicate where)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	Page6/ Line 5-6	
Experimental study design (statistics details)	Yes (indicate where)	n/a
State whether and how the following have been done, or if they were not carried out.	Page7/ Line 9-11	
Sample size determination	Page7/ Line 9-11	
Randomisation	Page7/ Line 9-11	
Blinding	Page7/ Line 9-11	
Inclusion/exclusion criteria	Page7/ Line 9-11	
Sample definition and in-laboratory replication	Yes (indicate where)	n/a
State number of times the experiment was replicated in laboratory	Page4/ Line 23, Page6/ Line 18	
Define whether data describe technical or biological replicates	Page4/ Line 23, Page6/ Line 18	
Ethics	Yes (indicate where)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page4/ Line 2-3	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		We didn't use any animal.
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Page3/ Line 29-34	
Dual Use Research of Concern (DURC)	Yes (indicate where)	n/a
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval	Our study is not subject to 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.	Page3/ Line 29-34	
Statistics	Yes (indicate where)	n/a
Describe statistical tests used and justify choice of tests.	Page7/ Line 9-11	
Data Availability	Yes (indicate where)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	We have stated in point by point response.	
If data are publicly available, provide accession number in repository or DOI or URL.	Page1/ Line 24	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Page1/ Line 24	
Code Availability	Yes (indicate where)	n/a
For all newly generated code and software essential for replicating the main findings of the study:	Page1/ Line 24	
State whether the code or software is available.	Page1/ Line 24	
If code is publicly available, provide accession number in repository, or DOI or URL.	Page1/ Line 24	

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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