

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: section/paragraph)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if	Methods/Western blot	
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	Methods/Cell culture	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	This study did not use primary cell lines.	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	This study did not use laboratory animals.	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	This study did not use laboratory animals.	n/a
Model organisms: Provide Accession number in repository (where relevant) OR RRID	This study did not use laboratory animals.	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)	This study did not use plants and microbes.	n/a
Microbes: provide species and strain, unique accession number if available, and source	This study did not use plants and microbes.	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.	This study does not involve human samples and research.	n/a
Provide statement confirming informed consent obtained from study participants.	This study does not involve human samples and research.	n/a
Report on age and sex for all study participants.	This study does not involve human samples and research.	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.	This study does not involve 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.	Methods/Drug treatment	
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.	Methods/Statistical analysis	
Sample size determination	Methods/Statistical analysis	
Randomisation	Methods/Detection of ROS level	
Blinding	Methods/Statistical analysis	
Inclusion/exclusion criteria	This study does not involve Inclusion/exclusion criteria.	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	Methods/Statistical analysis	
Define whether data describe technical or biological replicates	Methods/Statistical analysis	
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.	This study does not involve human participants.	n/a
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	This study does not involve experimental animals.	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.	This study does not involve specimen and 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	There is no Dual Use Research of Concern in this study.	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 sample or data point from the analysis is excluded.	n/a
Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Methods/Statistical analysis	
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.	Footnote/Paragraph 1	
If data are publicly available, provide accession number in repository or DOI or URL.	This study does not involve publicly available data.	n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	This study does not involve 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:	This study does not involve newly generated code and software.	n/a
State whether the code or software is available.	This study does not involve newly generated code and	n/a
If code is publicly available, provide accession number in repository, or DOI or URL.	This study does not involve newly generated code and 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.	Footnote/Paragraph 1	
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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