

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 For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 7 Line 141 Section 2. Materials and Methods paragraph 1-5	n/a
Cell materials Cell lines: Provide species information, strain. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID Primary cultures: Provide species, strain, sex of origin, genetic modification status.	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a
Experimental animals Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID Animal observed in or captured from the field: Provide species, sex and age where possible Model organisms: Provide Accession number in repository (where relevant) OR RRID	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a
Plants and microbes Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens) Microbes: provide species and strain, unique accession number if available, and source	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a
Human research participants Identify authority granting ethics approval (IRB or equivalent committee(s)), provide reference number for approval. Provide statement confirming informed consent obtained from study participants. Report on age and sex for all study participants.	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a

Design

Study protocol For clinical trials, provide the trial registration number OR cite DOI in manuscript.	Yes (indicate where provided: section/paragraph) Page 6 Line 113~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 2-5	n/a
Laboratory protocol Provide DOI or other citation details if detailed step-by-step protocols are available.	Yes (indicate where provided: section/paragraph) Page 6 Line 113~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 2-5	n/a
Experimental study design (statistics details) Sample size determination	Yes (indicate where provided: section/paragraph) Page 6 Line 113~118 Section 2. Materials and Methods, paragraph 2	n/a
Randomisation	Page 6 Line 119~128 Section 2. Materials and Methods, paragraph 3	
Blinding	Page 6 Line 129~ Page 7 Line 134 Section 2. Materials and Methods, paragraph 4	
Inclusion/exclusion criteria	Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	
Sample definition and in-laboratory replication State number of times the experiment was replicated in laboratory	Yes (indicate where provided: section/paragraph) Page 7 Line 135~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 5	n/a
Define whether data describe technical or biological replicates	Page 7 Line 135~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 5	
Ethics Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	
Dual Use Research of Concern (DURC) If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval	Yes (indicate where provided: section/paragraph) Page 14 Line 287-288 Section Funding, paragraph 2	n/a

Analysis

Attrition State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.	Yes (indicate where provided: section/paragraph) Page 7 Line 135~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 5	n/a
Statistics Describe statistical tests used and justify choice of tests.	Yes (indicate where provided: section/paragraph) Page 7 Line 135~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 5	n/a
Data Availability State whether newly created datasets are available, including protocols for access or restriction on access.	Yes (indicate where provided: section/paragraph) Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1	n/a
If data are publicly available, provide accession number in repository or DOI or URL.	Page 5 Line 100~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 1-5	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Page 5 Line 100~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 1-5	
Code Availability For all newly generated code and software essential for replicating the main findings of the study: State whether the code or software is available.	Yes (indicate where provided: section/paragraph) Page 7 Line 135~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 5	n/a
	Page 5 Line 100~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 1-5	
If code is publicly available, provide accession number in repository, or DOI or URL.	Page 5 Line 100~ Page 7 Line 141 Section 2. Materials and Methods, paragraph 1-5	

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.	Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, 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.	Page 5 Line 100~ Page 6 Line 112 Section 2. Materials and Methods, paragraph 1 ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication.	

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