

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 available.	We did not use antibodies in this study	N/A
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	We did not use any cell materials in this study	N/A
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	We did not culture any cell in this study	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	We did not use laboratory animal in this study	N/A
Animal observed in or captured from the field: Provide species, sex and age where possible	We did not observe or capture any animal in this study	N/A
Model organisms: Provide Accession number in repository (where relevant) OR RRID	We did not use any organism of animal	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)	We did not use any plant in this study	N/A
Microbes: provide species and strain, unique accession number if available, and source	We did not use microbe in this study	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.	Methods: first paragraph Footnote: Ethical Statement	
Provide statement confirming informed consent obtained from study participants.	Footnote: Ethical Statement	
Report on age and sex for all study participants.	Results: Participant characteristics	

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 is not a clinical trial	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: DNA extraction and PCR amplification to Data processing	
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.		
Sample size determination	Phenylalanine is a rare disease, we did not count the sample size in this study	N/A
Randomisation	We did not use randomization in this study	N/A
Blinding	We did not use blinding in this study	N/A
Inclusion/exclusion criteria	Methods: Study population and sample collection	
Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	Results: Paragraph 2	
Define whether data describe technical or biological replicates	The data replicated by technical at Results: Paragraph 2	
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.	Methods: first paragraph Footnote: Ethical Statement	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Our study is not involving 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.	Our study is not involving 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	The study was not a 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.	Results: Paragraph 2	
Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Methods: Phenotype association 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: Data Availability	
If data are publicly available, provide accession number in repository or DOI or URL.	Footnote: Data Availability	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	Email to correspondence author	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:		
State whether the code or software is available.	We did not use the code	N/A
If code is publicly available, provide accession number in repository, or DOI or URL.	We did not use the 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 recommendations for publication.	

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