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, Methods/paragraph 7	

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	Yes, Methods/paragraph 2	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	None, the primary cell culture is not involved 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	None, animal experiments are not involved in this study	n/a
Animal observed in or captured from the field: Provide species, sex and age where possible	None, animal experiments are not involved in this study	n/a
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	None, animal experiments are not involved in this study	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)	None, plant experiments are not involved in this study	n/a
Microbes: provide species and strain, unique accession number if available, and source	None, microbial experiments are not involved 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.	None, no human and human specimen related experiments are involved in this study	n/a
Provide statement confirming informed consent obtained from study participants.	None, no human and human specimen related experiments are involved in this study	n/a
Report on age and sex for all study participants.	None, no human and human specimen related	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.	None, this study is not a clinical trial study	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.	Yes, Methods/paragraph 3 and 8. 10.1016/j.freeradbiomed.2018.08.032	

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	Yes, they were carried out.	
Randomisation	Yes, the sample in our experiment was randomly	
Blinding	Yes, we were not affected by other interfering	
Inclusion/exclusion criteria	None, this study is not a clinical trial study and does not involve inclusion and 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	Yes, n=3, Results/paragraph 1	
Define whether data describe technical or biological replicates	Yes, technical and biological replicates	

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.	None, there is no human ethics study in this paper	n/a
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	None, there is no animals ethics study in this paper	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.	None, there is no human and animal ethics study in this paper	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	None, this study does not involve dual-use studies	**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.	None, the study did not exclude samples or data points from the analysis.	n/a

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Methods/paragraph 10. An unpaired 2-sided Student t-test or one-way ANOVA with Bonferroni correction	

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 section. The data that support the findings of this study are available from the corresponding author upon reasonable request.	
If data are publicly available, provide accession number in repository or DOI or URL.	None,the data of this study is not published yet	n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	None,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:		
State whether the code or software is available.	None, this study does not involve the code or	n/a
If code is publicly available, provide accession number in repository, or DOI or URL.	None, this study does not involve the code or	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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