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) | n/a |
|------------|----------------------|-----|
| For commercial reagents, provide supplier name, catalogue number and RRID, if available. | Materials and Method section: Page 5 line 119 | |

| Cell materials | Yes (indicate where) | n/a |
|----------------|----------------------|-----|
| Cell lines: Provide species information, strain. Provide accession number in repository or supplier name, catalog number, clone number, OR RRID | Not used |
| Primary cultures: Provide species, strain, sex of origin, genetic modification status. | Not used |

| Experimental animals | Yes (indicate where) | 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 | Materials and Method section: Page 6 line 143 |
| Animal observed in or captured from the field: Provide species, sex and age where possible | Not used |
| Model organisms: Provide Accession number in repository (where relevant) OR RRID | Not used |

| Plants and microbes | Yes (indicate where) | n/a |
|---------------------|----------------------|-----|
| Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens) | Not used |
| Microbes: provide species and strain, unique accession number if available, and source | Not used |

| Human research participants | Yes (indicate where) | n/a |
|----------------------------|----------------------|-----|
| Identify authority granting ethics approval (IRB or equivalent committee(s)), provide reference number for approval. | Not identifiable |
| Provide statement confirming informed consent obtained from study participants. | Materials and Method section: Page 4 line 108 |
| Report on age and sex for all study participants. | Only summarized data available |
**Design**

| Study protocol | Yes (indicate where provided): | n/a |
|----------------|--------------------------------|-----|
| For clinical trials, provide the trial registration number OR cite DOI in manuscript. | | Not a clinical trial |

| Laboratory protocol | Yes (indicate where provided): | n/a |
|---------------------|--------------------------------|-----|
| Provide DOI or other citation details if detailed step-by-step protocols are available. | Materials and Method section: Page 5 line 114, line 123 |

| Experimental study design (statistics details) | Yes (indicate where provided): | n/a |
|------------------------------------------------|--------------------------------|-----|
| State whether and how the following have been done, or if they were not carried out. | | |
| Sample size determination | | Not applicable here |
| Randomisation | | Not applicable here |
| Blinding | | Not applicable here |
| Inclusion/exclusion criteria | Method: Page 4 line 106 |

| Sample definition and in-laboratory replication | Yes (indicate where provided): | n/a |
|-------------------------------------------------|--------------------------------|-----|
| State number of times the experiment was replicated in laboratory | Materials and Method section: Page 6 line 156 |
| Define whether data describe technical or biological replicates | Materials and Method section: Page 6 line 155 |

| Ethics | Yes (indicate where provided): | n/a |
|--------|--------------------------------|-----|
| Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval. | Materials and Method section: Page 4 line 109 |
| Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval. | Materials and Method section: Page 6 line 158 |
| Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why. | Not used |

| Dual Use Research of Concern (DURC) | Yes (indicate where provided): | n/a |
|------------------------------------|--------------------------------|-----|
| If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval | | No dual use |
### Analysis

| Attrition                          | Yes (indicate where provided): | 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. |                                  | Not applicable |

| Statistics                        | Yes (indicate where provided): | n/a          |
|-----------------------------------|---------------------------------|--------------|
| Describe statistical tests used and justify choice of tests. | Materials and Method section: Page 5 line 130 |              |

| Data Availability                 | Yes (indicate where provided): | n/a          |
|-----------------------------------|---------------------------------|--------------|
| State whether newly created datasets are available, including protocols for access or restriction on access. | State in the Data availability section: Page 10 line 257 |              |
| If data are publicly available, provide accession number in repository or DOI or URL. | State in the Data availability section: Page 10 line 257 |              |
| If publicly available data are reused, provide accession number in repository or DOI or URL, where possible. | Not reused |              |

| Code Availability                 | Yes (indicate where provided): | 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. | No code/software |              |
| If code is publicly available, provide accession number in repository, or DOI or URL. | Not applicable |              |

### 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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