# 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: page | n/a |
|---|---|---|
| For commercial reagents, provide supplier name, catalogue number and RRID, if available. | | Did not use |

| Cell materials | Yes (indicate where provided: page | n/a |
|---|---|---|
| **Cell lines:** Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID | | Did not use |
| **Primary cultures:** Provide species, strain, sex of origin, genetic modification status. | | Did not use |

| Experimental animals | Yes (indicate where provided: page | 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 | | Did not use |
| **Animal observed in or captured from the field:** Provide species, sex and age where possible | | Did not use |
| **Model organisms:** Provide Accession number in repository (where relevant) **OR** RRID | | Did not use |

| Plants and microbes | Yes (indicate where provided: page | n/a |
|---|---|---|
| **Plants:** provide species and strain, unique accession number if available, and source (including location for collected wild specimens) | | Did not use |
| **Microbes:** provide species and strain, unique accession number if available, and source | | Did not use |

| Human research participants | Yes (indicate where provided: page | n/a |
|---|---|---|
| Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval. | | Did not use |
| Provide statement confirming informed consent obtained from study participants. | | Did not use |
| Report on age and sex for all study participants. | | Did not |

## Design

| Study protocol | Yes (indicate where provided: page | 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: page | n/a |
|---|---|---|
| Provide DOI or other citation details if detailed step-by-step protocols are available. | | Not involved |

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

| Sample definition and in-laboratory replication | Yes (indicate where provided: page | n/a |
|---|---|---|
| State number of times the experiment was replicated in laboratory | | Not involved |
| Define whether data describe technical or biological replicates | | Not involved |

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

| Dual Use Research of Concern (DURC) | Yes (indicate where provided: page | n/a |
|---|---|---|
| If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval | | Not involved |

## Analysis

| Attrition | Yes (indicate where provided: page no/section/legend) | 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. | Page4-5 line 74-92/ Gene expression profiles data/Fig 2-3 | |

| Statistics | Yes (indicate where provided: page no/section/legend) | n/a |
|---|---|---|
| Describe statistical tests used and justify choice of tests. | Page5-6 line 94-104/ Data processing/Fig 1 | |

| Data Availability | Yes (indicate where provided: page no/section/legend) | n/a |
|---|---|---|
| State whether newly created datasets are available, including protocols for access or restriction on access. | | Not in |
| If data are publicly available, provide accession number in repository or DOI or URL. | Page4-7 line 76 / Gene expression profiles data | |
| If publicly available data are reused, provide accession number in repository or DOI or URL, where possible. | | Not in |

| Code Availability | Yes (indicate where provided: page no/section/legend) | 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. | yes | |
| If code is publicly available, provide accession number in repository, or DOI or URL. | Page 5-7 line 95,107,109,115,119,123,129,133,136,138/Methods | |

## Reporting

| Adherence to community standards | Yes (indicate where provided: page no/section/legend) | 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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