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. | In the "Materials and Methods". |     |

| 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 | | Sample is human tissue |
| Primary cultures: Provide species, strain, sex of origin, genetic modification status. | | Sample is human tissue |

| 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 | | Sample is human tissue |
| Animal observed in or captured from the field: Provide species, sex and age where possible | | Sample is human tissue |
| Model organisms: Provide Accession number in repository (where relevant) OR RRID | | Sample is human tissue |

| 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) | | Sample is human tissue |
| Microbes: provide species and strain, unique accession number if available, and source | | Sample is human tissue |

| 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. | In the last sentence of "Tissue samples" of "Materials and Methods": this study protocol was approved by the Ethics Committee of the First Affiliated Hospital of Kunming Medical University and obtained written consent (Number 2020L-29). |     |
| Provide statement confirming informed consent obtained from study participants. | In the last sentence of “Tissue samples” of “Materials and Methods”: written informed consent was obtained from all patients. |     |
| Report on age and sex for all study participants. | In the “Tissue samples” of “Materials and Methods” |     |
**Design**

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

| **Laboratory protocol** | **Yes (indicate where provided: section/paragraph)** | **n/a** |
|-------------------------|---------------------------------------------------|---------|
| Provide DOI or other citation details if detailed step-by-step protocols are available. | | Unavailable. |

| **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. | In the “Tissue samples” of “Materials and Methods” | |
| Sample size determination | In the “Tissue samples” of “Materials and Methods” | |
| Randomisation | | Not need |
| Blinding | | Not need |
| Inclusion/exclusion criteria | In the “Tissue samples” of “Materials and Methods” | |

| **Sample definition and in-laboratory replication** | **Yes (indicate where provided: section/paragraph)** | **n/a** |
|-------------------------------------------------------|---------------------------------------------------|---------|
| State number of times the experiment was replicated in laboratory | In the “Tissue samples” and “qRT-PCR” of “Materials and Methods” | |
| Define whether data describe technical or biological replicates | In the “Tissue samples” and “qRT-PCR” of “Materials and Methods” | |

| **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. | In the last sentence of “Tissue samples” of “Materials and Methods”: this study protocol was approved by the Ethics Committee of the First Affiliated Hospital of Kunming Medical University and obtained written consent [Number (2020)-L-29]. | |
| Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s)), provide reference number for approval. | | Non-animal experiment |
| Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why. | In the last sentence of “Tissue samples” of “Materials and Methods”: this study protocol was approved by the Ethics Committee of the First Affiliated Hospital of Kunming Medical University and obtained written consent [Number (2020)-L-29]. | |

| **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 | | No dual use research |
## Analysis

| Attraction | 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. | No excluded |

| Statistics | Yes (indicate where provided: section/paragraph) | n/a |
|------------|--------------------------------------------------|-----|
| Describe statistical tests used and justify choice of tests. | Not used |

| 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. | All relevant data are within the manuscript and its Supporting Information files. |
| If data are publicly available, provide accession number in repository or DOI or URL | Not publicly available |
| If publicly available data are reused, provide accession number in repository or DOI or URL, where possible | Not used |

| 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 | Not newly |
| State whether the code or software is available | Unavailable |
| If code is publicly available, provide accession number in repository, or DOI or URL | Unavailable |

## 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. | ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication. |
| State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript. | |

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