

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:	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Page4---Page6	
Cell materials	Yes (indicate where provided:	n/a
Cell lines: Provide species information, strain. Provide accession number in repository OR supplier name, catalog number, clone number, OR RRID	Page4 Second paragraph	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		The research object of this study is HCC cell lines, and Primary cultures are not adopted
Experimental animals	Yes (indicate where provided:	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		No animal experiments were involved in this study
Animal observed in or captured from the field: Provide species, sex and age where possible		No animal experiments were involved in this study
Model organisms: Provide Accession number in repository (where relevant) OR RRID		No animal experiments were involved in this study
Plants and microbes	Yes (indicate where provided:	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		No plants were used in this study
Microbes: provide species and strain, unique accession number if available, and source		No Microbes were used in this study
Human research participants	Yes (indicate where provided:	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Page4 and Page11	
Provide statement confirming informed consent obtained from study participants.	Page4 and Page11	
Report on age and sex for all study participants.	Table1	

Design

Study protocol	Yes (indicate where provided:	n/a
For clinical trials, provide the trial registration number OR cite DOI in manuscript.		This study was 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.		There is no detailed step-by-step protocols
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	This study is a basic study, using the method of intervention, and does not involve grouping	n/a
Randomisation		n/a
Blinding		n/a
Inclusion/exclusion criteria		n/a
Sample definition and in-laboratory replication	Yes (indicate where provided:	n/a
State number of times the experiment was replicated in laboratory	Page6 first paragraph	
Define whether data describe technical or biological replicates	Page6 first paragraph	
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.	Page4 and Page11	
Studies involving experimental animals : State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		No animal experiments were involved in this study
Studies involving specimen and field samples : State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	Page4 and Page11	
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		This study is not DURC.

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.		No sample or data point was excluded
Statistics	Yes (indicate where provided:	n/a

Describe statistical tests used and justify choice of tests.	Page7 second paragraph	
Data Availability	Yes (indicate where provided:	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.	The data of this experiment are obtained according to the standard steps. Statistical analysis plan, informed consent form, and clinical study report will also be shared if requested.	
If data are publicly available, provide accession number in repository or DOI or URL.		The data is not public
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		Experimental data are not reused publicly
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 software code was used in this study
If code is publicly available, provide accession number in repository, or DOI or URL.		No software code was used in this study

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 guidelines for publication.	

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