

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: section/paragraph)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Calnexin Rabbit mAb:ABClonal; cat: A0692 in "Materials and Methods" section with subhead "Protein localization analysis", Page 5, line 14 Anti-GM130 antibody: abcam; cat: ab169276 in "Materials and Methods" section with subhead "Protein localization analysis", Page 5, line 15	
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	Human, HEK- 293 in in "Materials and Methods" section with subhead "Protein localization analysis" Page 5, line 7	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	Human dental pulp stem cell culture from primary teeth of 7-year-old female patient and three age-matched healthy children in "Materials and Methods" section with subhead "Isolation and identification of human dental pulp stem cells" Page 5, line 22	
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		n/a
Animal observed in or captured from the field: Provide species, sex and age where possible		n/a
Model organisms: Provide Accession number in repository (where relevant) OR RRID		n/a
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)		n/a
Microbes: provide species and strain, unique accession number if available, and source		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.	"Materials and Methods" section with subhead "Participants and clinical assessments" Page 3, Line 23-25 "Ethical statement" Page 10, Line 9-16	
Provide statement confirming informed consent obtained from study participants.	"Materials and Methods" section with subhead "Participants and clinical assessments" Page 3, line 24	
Report on age and sex for all study participants.	1. participant 1: The proband, 7y, female 2. Participant 2: The father, 40y, 3. participant 3: The mother, 36y, female Page 3, line 26	

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number OR cite DOI in manuscript.		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.	Construction of the dsp plasmids: "Materials and Methods" section with subhead "Construction of plasmids" DOI: 10.1155/2013/948181 Page 5, line 2 Isolation and culturing of the hDPSCs: "Materials and Methods" section with subhead "Isolation and identification of human dental pulp stem cells" DOI: 10.1073/pnas.240309797 Page 5, line 23	
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		n/a
Randomisation		n/a
Blinding		n/a
Inclusion/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	All experiments were repeated three times: "Materials and Methods" section with subhead "Statistical Analysis" Page 6, line 12	
Define whether data describe technical or biological replicates	Data describe technical 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.	The study has been approved by the Medical Ethics Review Committee of Sichuan Provincial People's Hospital [2020(02)]: "Compliance with ethical standards" section with subhead "Ethical Statement" Page 10, Line 11	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		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.	The study has been approved by the Medical Ethics Review Committee of Sichuan Provincial People's Hospital [2020(02)]: "Compliance with ethical standards" section with subhead "Ethical Statement" Page 10, Line 11	
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		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.		n/a
Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	All the data are expressed as the mean \pm SD. The student t-test was used: "Materials and Methods" section with subhead "Statistical Analysis"	
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 the data used in this study are described in the "results" and "supplementary materials" sections Page 6, line 12	
If data are publicly available, provide accession number in repository or DOI or URL.	All the data used in this study are described in the "results" and "supplementary materials" sections	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		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:		n/a
State whether the code or software is available.		n/a
If code is publicly available, provide accession number in repository, or DOI or URL.		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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