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.	Yes,the supplier names and catalogue numbers of commercial reagents were provided (see section 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		**N/A.** No cell lines but primary culture was used in our study.
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	Yes. Human, male or female, no genetic modification (see Table 1).	

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		**N/A.** NO animals were involved in our study.
Animal observed in or captured from the field: Provide species, sex and age where possible		**N/A.** NO animals were observed in our study.
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		**N/A.** NO model organisms were involved in our study.

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)		**N/A.** NO plants were involved in our study.
Microbes: provide species and strain, unique accession number if available, and source		**N/A.** NO microbes were involved in our study.

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.	The experimental protocol was approved by the Medical Ethics Committee of the former Guangzhou General Hospital of Guangzhou Military Command (NO.2017-3-6) (see page 5, lines 19-21).	
Provide statement confirming informed consent obtained from study participants.	All study participants gave informed consent to undergo sampling (see page 5, lines 21-22).	
Report on age and sex for all study participants.	OK (see Table 1).	

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.** NO clinical trials were involved in our study.

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

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	See Table 1.	
Randomisation	Teeth in each group were divided randomly into three groups for gene expression analysis, immunohistochemical test, and cell culture (see page 5, lines 13-15).	
Blinding		N/A. No blinding was used in our experime-nt.
Inclusion/exclusion criteria	Inclusion: affected teeth of diabetic patients with periodontitis, periodontitis patients without systemic disease, and healthy premolars or buried third molars extracted during orthodontic procedures were collected. None of the study participants had systemic diseases or a long-term medication history except diabetes, and none of them had received periodontal treatment within the previous 3 months (see page 5, the first paragraph of Materials).	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	Three.	
Define whether data describe technical or biological replicates	Both.	

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 experimental protocol was approved by the Institutional Review Board for Human Subjects Research of the former Guangzhou General Hospital of Guangzhou Military Command (NO.2017-3-6) (see page 5, lines 19-21).	

Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		N/A. No experimental animals were involved in the study.
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	The sample were the periodontal tissues extracted from the root surface of the affected tooth and healthy premolars or buried third molars extracted during orthodontic procedures according to the needs of clinical treatment, which might be discarded normally, and all study participants gave informed consent to undergo sampling. The experimental protocol was approved by the Medical Ethics Committee of the former Guangzhou General Hospital of Guangzhou Military Command (NO.2017-3-6) (see page 5, the first paragraph of Materials).	

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.** Our study is not subject to dual use research of concern.

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.** No sample or data point from the analysis was excluded.

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	Differences between two groups were evaluated by unpaired two-tailed Student's t-test, and the data of more than two groups were analyzed by one-way analysis of variance (ANOVA) followed by Dunnett's test (see page 10, 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.		**N/A.** No newly created datasets were involved in this paper.
If data are publicly available, provide accession number in repository or DOI or URL.		**N/A.** The data are not publicly available.
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		**N/A.** No publicly available data were reused.

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:		
State whether the code or software is available.		**N/A.** No newly generated code and software were involved in this study.
If code is publicly available, provide accession number in repository, or DOI or URL.		**N/A.** No code is publicly available 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 recommendations for publication.	

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