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.	cGAS, STING, p-MST1, MST1, FOXO1, β-actin(CST, USA,15102(AB_2732795), 13647(AB_2732796), 49332(AB_2799355),14946(AB_2798654), 2880(AB_2106495), 8457(AB_10950489)) p-FOXO1(Invitrogen, USA, 44-1230G(AB_1500126)) provide in method section	

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
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	For isolating FLS, synovial tissues obtained from RA patients. provide in method section	

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
Animal observed in or captured from the field: Provide species, sex and age where possible	4-week-old male SCID mice. provide in method section	
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		n/a

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
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.	The trial was conducted in accordance with the Declaration of Helsinki. The study was approved by the Institutional Review Board (or Ethics Committee) of the First Affiliated Hospital, Sun Yat-sen University (No.: [2017]049) . provide in footnote section	
Provide statement confirming informed consent obtained from study participants.	Informed consent was taken from all individual participants. provide in footnote section	
Report on age and sex for all study participants.	The age and sex were not the most important element, then not make statistic.	

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.	Determination of in vivo invasion of RA FLSs into human cartilage implants(1).(1)Müller-Ladner U, Kriegsmann J, Franklin BN, et al. Synovial fibroblasts of patients with rheumatoid arthritis attach to and invade normal human cartilage when engrafted into SCID mice. Am J Pathol 1996;149:1607-15. provide in method section	

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.	provide in method and figure legends section.	
Sample size determination		n/a
Randomisation		n/a
Blinding	provide in method and figure legends section.	
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	Every experiment repeat at least three times. provide in method and figure legends section.	
Define whether data describe technical or biological replicates	According to experiment introduction, biological replicates and technical replicates. Samples described including a clear definition of the unit of study in method, results figure, and figure legends section.	

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 trial was conducted in accordance with the Declaration of Helsinki. The study was approved by the Institutional Review Board (or Ethics Committee) of the First Affiliated Hospital, Sun Yat-sen University(No.: [2017]049) and informed consent was taken from all individual participants. provide in footnote section	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	All procedures involving animals were approved by the Institutional Animal Care and Use Committee (IACUC) of Sun Yat-sen University(SYSU-IACUC-2021-000028). provide in footnote section	
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		n/a

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 statistical analyses of the data were performed using the SPSS 13.0 software and were analyzed in a blinded manner. Data are expressed as the means ± Standard Error of Mean(SEM). Presented values were derived from at least 3 independent experiments. A 2-tailed Student's t test was employed for analysis the differences between 2 groups and 1-way ANOVA analysis of variance with Bonferroni's post hoc comparisons was used to analyze for three and more groups in normally distributed data. We used nonparametric tests (Mann-Whitney rank sum test for two groups or the Kruskal-Wallis one-way analysis among three groups for continuous variables) to compare the differences between different groups in abnormal distribution data. P-values less than 0.05 were considered significant.	

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
If data are publicly available, provide accession number in repository or DOI or URL.		n/a
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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