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.	anti-PTEN (ab32199, Abcam), anti-p53 (2542 CST), anti-PI3K (ab186612, Abcam), anti-p-PI3K (ab182651,Abcam), anti-AKT1/2/3 (ab179463, Abcam), anti-p-AKT(s473) (ab81283, Abcam), anti-mTOR (2983, CST), anti-p-mTOR(s2448) (5536,CST), anti-cyclin B1 (ab181593, Abcam), anti-Bcl-2 (ab32124, Abcam), anti-cyclin D1 (ab134175, Abcam), anti-Bax (ab77566, Abcam), anti-p21 (ab109520, Abcam), anti-Caspase-3 (ab32351, Abcam), anti- GSK-3 β (ab75814, Abcam), anti- β -actin (ab8226, Abcam), and anti-p27 (ab32034, Abcam), anti-JNK1 (ab199380, Abcam), anti-ASK1 (ab45178, Abcam), anti-p38 (ab182453, Abcam), anti-phosphol-p38 (ab178867, Abcam).	

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	U118 (ATCC® HTB-15TM) was purchased from American Tissue Culture Collection (ATCC, 10801 University Boulevard Manassas,VA 20110-2209 USA). Mouse ESCs and human MSCs were gifts from Professor Andy Peng Xiang.	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	**n/a** **There is no such experiment in the article.**	

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** **There is no such experiment in the article.**	
Animal observed in or captured from the field: Provide species, sex and age where possible	**n/a** **There is no such experiment in the article.**	
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	**n/a** **There is no such experiment in the article.**	

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** **There is no such experiment in the article.**	
Microbes: provide species and strain, unique accession number if available, and source	**n/a** **There is no such experiment in the article.**	

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.	**n/a** **There is no such experiment in the article.**	
Provide statement confirming informed consent obtained from study participants.	**n/a** **There is no such experiment in the article.**	
Report on age and sex for all study participants.	**n/a** **There is no such experiment in the article.**	

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** **Clinical trials are not involved in the article**	

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	No The experimental steps involved in the article are all written in the 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	**n/a** **There is no animal or patient experiment involved in the article.**	
Randomisation	**n/a** **There is no animal or patient experiment involved in the article.**	
Blinding	**n/a** **There is no animal or patient experiment involved in the article.**	
Inclusion/exclusion criteria	**n/a** **There is no animal or patient experiment involved in the article.**	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	**Each experiment in that article was repeat three times.**	
Define whether data describe technical or biological replicates	**Repeated experimental data were done by the same person at different time points in the same laboratory.**	

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.	**n/a** **There is no such experiment in the article.**	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	**n/a** **There is no such experiment in the article.**	
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** **There is no such experiment in the article.**	

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** There is no biosafety-related material in the article.	

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** There are no excluded data points or samples for this article.	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	All data in this study were analyzed using SPSS 11.0 software. All data were expressed as mean ± standard deviation. Group data were statistically analyzed using the analysis of variance (ANOVA) method, and P<0.05 was considered statistically significant (*P<0.05, **P<0.01, ***P<0.001, ****P<0.0001).	

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** **There is no dataset in this article.**	
If data are publicly available, provide accession number in repository or DOI or URL.	**n/a** **There is no dataset in this article.**	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	**n/a** **There is no dataset in this article.**	

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** **There is no code in this article.**	
If code is publicly available, provide accession number in repository, or DOI or URL.	**n/a** **There is no code in this article.**	

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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