Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishesa 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.	Methods/paragraph 3 : GAPDH(#2118, Cell Signaling Technology) SREBP(sc-13551, Santa Cruz Biotechnology) LXRα/β(sc-377260,Santa Cruz Biotechnology) IκB(ab32518, Abcam) NFκB(ab32536, Abcam) Lamin B(abs131244, Absin Bioscience)	None

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	Methods/paragraph 1: The human A549 alveolar epithelial cell line was obtained from Peking University Medical Laboratory (Beijing, China)	None
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	None	None

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	None	None
Animal observed in or captured from the field: Provide species, sex and age where possible	None	None
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	None	None

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)	None	None
Microbes:provide species and strain, unique accession number if available, and source	None	None

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.	None	None
Provide statement confirming informed consent obtained from study participants.	None	None
Report on age and sex for all study participants.	None	None

Design

Studyprotocol	Yes (indicate where provided:section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR**cite DOI in manuscript.	None	None

Laboratoryprotocol	Yes (indicate where provided:section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	Abstract/paragraph 2: The A549 human alveolar basal epithelial cell line was exposed to PHMG, T0901317, or the nuclear factor (NF)κB inhibitor BAY11-7082. The cell survival rate was used to determine the cytotoxicity of PHMG and T0901317 to A549 cells. Western blot analysis was used to determine the expression of proteins related to the LXRs and the NFκB signaling pathway. Enzyme-linked immunosorbent assay (ELISA) was conducted to examine the expression of inflammatory cytokines such as interleukin (IL)-8 and IL-6.	None

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.	None	None
Sample size determination	None	None
Randomisation	None	None
Blinding	None	None
Inclusion/exclusion criteria	None	None

Sample definition and in-laboratory replication	Yes (indicate where provided:section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	Methods/paragraph 5: Three times.	None
Define whether data describe technical or biological replicates	Methods/paragraph 5: Biological replicates.	None

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.	None	None
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	None	None
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	None	None

Dual Use Research of Concern (DURC)	Yes (indicate where provided:section/paragraph)	n/a
If study is subject to dual use research ofconcern, statethe authority granting approval and reference number for the regulatory approval	None	None

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.	None	None

Statistics	Yes (indicate where provided:section/paragraph)	n/a
Describestatistical tests used and justify choice of tests.	Methods/paragraph 5.	None

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.	None	None
If data are publicly available, provide accession number in repository or DOI or URL.	None	None
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	None	None

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:	None	None
State whether the code or software is available.	None	None
If code is publicly available, provide accession number in repository, or DOI or URL.	None	None

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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