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.	Antibody supplier name and catalogue number are listed in Supplementary Table 4.	

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	We described the species information, strain, supplier name and catalog number of our cell lines (section "Cell culture" on page 9).	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		**n/a**

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	We described the species, strain, sex and age of mice (section "Animal studies" on page 14-16).	
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: 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.	We stated all procedures related to the samples followed relevant ethical regulations and were approved by the Research Ethic Committee of the First Affiliated Hospital of Nanjing Medical University (2019-SR-123). (section " Ethics approval and consent to participate" on page 30).	
Provide statement confirming informed consent obtained from study participants.	We stated that informed consent was obtained from all individual participants (section " Ethics approval and	
Report on age and sex for all study participants.	They were listed in Supplementary 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**

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

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	We referenced other literature and selected 20 as the sample size for xenograft assay and immunocompetent mouse model and 6 as the sample size for lung metastasis model (section "Animal studies" on page 14-16).	
Randomisation	A statement about randomization was included (section "Animal studies" on page 14-16).	
Blinding	A statement about blinding was included (section "Animal studies" on page 14-16).	
Inclusion/exclusion criteria	We used the inclusion criteria that all patients were diagnosed with primary LUAD and had not received any chemotherapy or radiotherapy before surgery to screen out LUAD patients (section " Patients and tissue specimens " on page 8).	

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 (section " Figure legends ").	
Define whether data describe technical or biological replicates	Yes, biological replicates (section " Figure legends ").	

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.	We stated all procedures related to the samples followed relevant ethical regulations and were approved by the Research Ethic Committee of the First Affiliated Hospital of Nanjing Medical University (2019-SR-123) (section " Ethics approval and consent to participate" on page 30).	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	We stated all animal experiments were performed in accordance with the protocol approved by the Ethics Committee of Nanjing Medical University (IACUC-2208008) (section " Ethics approval and consent to participate" on page 30).	
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	We stated all procedures related to the samples followed relevant ethical regulations and were approved by the Research Ethic Committee of the First Affiliated Hospital of Nanjing Medical University (2019-SR-123). (section " Ethics approval and consent to participate" on page 30).	

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.	We used the inclusion criteria that all patients were diagnosed with primary LUAD and had not received any chemotherapy or radiotherapy before surgery to screen out LUAD patients (section " Patients and tissue specimens " on page 8).	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	We described statistical tests used and justify choice of tests (section " Statistical analysis" on page 17).	

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.	The data that support the findings of the current study are available from the corresponding author upon reasonable request (section " Data Sharing Statement " on page 30)	
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:		
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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