

Corresponding Author Name: _____
 Manuscript Number: _____

Reporting Checklist

This checklist is used to ensure good reporting standards and to improve the reproducibility of published results. **Please respond completely to all questions relevant to your manuscript.** For more information, please read the journal’s Guide to Authors.

Check here to confirm that the following information is available in the Material & Methods section:

- the **exact sample size (n)** for each experimental group/condition, given as a number, not a range;
- a **description of the sample collection** allowing the reader to understand whether the samples represent **technical or biological replicates** (including how many animals, litters, culture, etc.);
- a **statement of how many times the experiment shown was replicated in the laboratory**;
- **definitions of statistical methods and measures:** (For small sample sizes (n<5) descriptive statistics are not appropriate, instead plot individual data points)
 - very common tests, such as *t*-test, simple χ^2 tests, Wilcoxon and Mann-Whitney tests, can be unambiguously identified by name only, but more complex techniques should be described in the methods section;
 - are tests one-sided or two-sided?
 - are there adjustments for multiple comparisons?
 - **statistical test results**, e.g., **P values**;
 - definition of **‘center values’** as **median or mean**;
 - definition of **error bars as s.d. or s.e.m. or c.i.**

Please ensure that the answers to the following questions are reported **in the manuscript itself**. We encourage you to include a specific subsection in the methods section for statistics, reagents and animal models. Below, provide the page number or section and paragraph number.

Statistics and general methods

Reported in section/paragraph or page

1. How was the sample size chosen to ensure adequate power to detect a pre-specified effect size? (Give section/paragraph or page #)

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For animal studies, include a statement about sample size estimate even if no statistical methods were used.

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2. Describe inclusion/exclusion criteria if samples or animals were excluded from the analysis. Were the criteria pre-established? (Give section/paragraph or page #)

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3. If a method of randomization was used to determine how samples/animals were allocated to experimental groups and processed, describe it. (Give section/paragraph or page #)

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For animal studies, include a statement about randomization even if no randomization was used.

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4. If the investigator was blinded to the group allocation during the experiment and/or when assessing the outcome, state the extent of blinding. (Give section/paragraph or page #)

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For animal studies, include a statement about blinding even if no blinding was done.

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5. For every figure, are statistical tests justified as appropriate?

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Do the data meet the assumptions of the tests (e.g., normal distribution)?

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Is there an estimate of variation within each group of data?

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Is the variance similar between the groups that are being statistically compared? (Give section/paragraph or page #)

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Reagents

Reported in section/paragraph or page #

6. Report the source of antibodies (vendor and catalog number)

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7. Identify the source of cell lines and report if they were recently authenticated (e.g., by STR profiling) and tested for mycoplasma contamination

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Animal Models

Reported in section/paragraph or page #

8. Report species, strain, sex and age of animals

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9. For experiments involving live vertebrates, include a statement of compliance with ethical regulations and identify the committee(s) approving the experiments.

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10. We recommend consulting the ARRIVE guidelines ([PLoS Biol. 8\(6\), e1000412,2010](https://doi.org/10.1371/journal.plosbio.1000412)) to ensure that other relevant aspects of animal studies are adequately reported.

Human subjects

Reported in section/paragraph or page

11. Identify the committee(s) approving the study protocol.

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12. Include a statement confirming that informed consent was obtained from all subjects.

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13. For publication of patient photos, include a statement confirming that consent to publish was obtained.

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14. Report the clinical trial registration number (at ClinicalTrials.gov or equivalent).

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15. For phase II and III randomized controlled trials, please refer to the [CONSORT statement](#) and submit the CONSORT checklist with your submission.

16. For tumor marker prognostic studies, we recommend that you follow the [REMARK reporting guidelines](#).

Data deposition

Reported in section/paragraph or page

17. Provide accession codes for deposited data.

Data deposition in a public repository is mandatory for:

- a. Protein, DNA and RNA sequences
- b. Macromolecular structures
- c. Crystallographic data for small molecules
- d. Microarray data

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Deposition is strongly recommended for many other datasets for which structured public repositories exist; more details on our data policy are available in the Guide to Authors. We encourage the provision of other source data in supplementary information or in unstructured repositories such as [Figshare](#) and [Dryad](#). We encourage publication of Data Descriptors (see [Scientific Data](#)) to maximize data reuse.

18. If computer code was used to generate results that are central to the paper's conclusions, include a statement in the Methods section under "**Code availability**" to indicate whether and how the code can be accessed. Include version information as necessary and any restrictions on availability.

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