R-spondin 1 and noggin facilitate expansion of resident stem cells from non-damaged gallbladders

Natalia Lugli, Irene Kamileri, Adrian Keogh, Thomas Malinka, Michalis Sarris, Iannis Talianidis, Olivier Schaad, Daniel Candinas, Deborah Stroka, Thanos Halazonetis

Corresponding author: Thanos Halazonetis, University of Geneva

Review timeline:

Submission date: 05 February 2016
Editorial Decision: 12 February 2016
Revision received: 21 February 2016
Accepted: 26 February 2016

Editor: Barbara Pauly

Transaction Report:

No Review Process File is available with this article, as the authors have chosen not to make the review process public in this case.
You must complete all cells with a pink background.

**Please note that this checklist will be published alongside your paper**

**Corresponding Author Name:** Thanos Halazonestis

**Journal Submitted to:** EMBO Reports

**Manuscript Number:** EMOR-2016-42169V1

**Reporting Checklist for Life Sciences Articles (Rev. July 2015)**

This checklist is used to ensure good reporting standards and to improve the reproducibility of published results. These guidelines are consistent with the Principles and Guidelines for Reporting Preclinical Research issued by the NIH in 2014. Please follow the journal's author guidelines in preparing your manuscript.

### A. Figures

#### 1. Data

The data shown in figures should satisfy the following conditions:

- The data were obtained and processed according to the field's best practice and are presented to reflect the results of the experiments in an accurate and unbiased manner.
- Figure panels include only data points, measurements or observations that can be compared to each other in a scientifically meaningful way.
- Graphs include clearly labeled error bars for independent experiments and sample sizes. Unless justified, error bars should not be shown for technical replicates.
- If n ≤ 5, the individual data points from each experiment should be plotted and any statistical test employed should be justified.
- Source Data should be included to report the data underlying graphs. Please follow the guidelines set out in the authorship guidelines on Data Presentation.

#### 2. Captions

Each figure caption should contain the following information, for each panel where they are relevant:

- A specification of the experimental system investigated (e.g. cell line, species name).
- A description of the method(s) used to carry out the reported observations and measurements.
- An explicit mention of the biological and chemical entity(ies) that are being measured.
- An explicit mention of the biological and chemical entity(ies) that are altered/changed/perturbed in a controlled manner.
- 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, cultures, etc.).
- A statement of how many times the experiment shown was independently replicated in the laboratory.
- Definitions of statistical methods and measures:
  - Common tests, such as t-test (please specify whether paired or unpaired), simple q tests, Wilcoxon and Mann-Whitney tests, can be unambiguously identified by name only, but more complex techniques should be described in the methods section.
  - Use tests one-sided or two-sided?
  - Are there adjustments for multiple comparisons?
  - Mean statistical test results, e.g., P = 0.05 but not P < 0.05?
  - Definition of 'error values' as median or average?
  - Definition of error bars as s.d. or s.e.m.

Any descriptions too long for the figure legend should be included in the methods section and/or with the source data.

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, animal models and human subjects.

**In the pink boxes below, please provide the page number(s) of the manuscript draft or figure legend(s) where the information can be located. Every question should be answered. If the question is not relevant to your research, please write NA (non-applicable).**

### B. Statistics and general methods

1. a. How was the sample size chosen to ensure adequate power to detect a pre-specified effect size?  

1. b. For animal studies, include a statement about sample size estimates even if no statistical methods were used.  
   - Animals were used only to isolate stem cells and not to make comparisons between animal groups.

2. Describe inclusion/exclusion criteria if samples or animals were excluded from the analyses. Were the criteria predefined?  

3. Were any steps taken to minimize the effects of subjective bias when allocating animals/samples to treatment (e.g. randomization procedure)? If yes, please describe.  

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

5. Were any steps taken to minimize the effects of subjective bias during group allocation or/and when assessing results (e.g. blinding of the investigator)? If yes, please describe.  

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

7. Is the data from the same batch of reagents? Describe why or why not.  

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

9. Is the variance similar between the groups that are being statistically compared?  

---

**Useful Links for Completing This Form**

- [http://www.embopress.com](http://www.embopress.com)
- [http://bioinformatics.org](http://bioinformatics.org)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
- [http://www.1degreebio.org](http://www.1degreebio.org)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
- [http://www.consort-statement.org](http://www.consort-statement.org)
- [http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t](http://www.equator-network.org/reporting-guidelines/reporting-recommendations-for-t)
- [http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm](http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofanimals/index.htm)
C - Reagents

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

D - Animal Models

4. Report species, strain, gender, age of animals and genetic modification status where applicable. Please detail housing and husbandry conditions and the source of animals.

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

6. To show that antibodies were profiled for use in the system under study (assay and species), provide a citation, catalog number and/or clone number, supplementary information or reference to an antibody validation profile. e.g., AP-MS analysis of human histone deacetylase interactions in CEM-T cells (2013). PRIDE PXD000208.

7. Ensure data are ready to submit upon contract completion with a 14 hours back-up spike and file with standard plant-based chow.

D - Animal Models

8. Report the clinical trial registration number (at ClinicalTrials.gov or equivalent), where applicable.

9. In phase I and II randomized controlled trials, please refer to the CONSORT flow diagram (see link list at top right) and submit the CONSORT checklist (see link list at top right) with your submission. See author guidelines, under ‘Reporting Guidelines’. Please confirm you have submitted this list.

10. For tumor marker prognostic studies, we recommend that you follow the REMARK reporting guidelines (see link list at top right). See author guidelines, under ‘Reporting Guidelines’. Please confirm you have followed these guidelines.

E - Human Subjects

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

12. Include a statement confirming that informed consent was obtained from all subjects and that the experiments conformed to the principles set out in the WMA Declaration of Helsinki and the Department of Health and Human Services Belmont Report.

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

14. Report any restrictions on the availability (and/or on the use) of human data or samples.

15. Report the clinical trial registration number (at ClinicalTrials.gov or equivalent), where applicable.

16. For phase I and II randomized controlled trials, please refer to the CONSORT flow diagram (see link list at top right) and submit the CONSORT checklist (see link list at top right) with your submission. See author guidelines, under ‘Reporting Guidelines’. Please confirm you have submitted this list.

17. For tumor marker prognostic studies, we recommend that you follow the REMARK reporting guidelines (see link list at top right). See author guidelines, under ‘Reporting Guidelines’. Please confirm you have followed these guidelines.

F - Data Accessibility

18. Provide accession codes for deposited data. See author guidelines, under ‘Data Deposition’.

19. Deposition in a public repository is mandatory for:
   a. Protein, DNA and RNA sequences
   b. Molecular structures
   c. Crystallographic data for small molecules
   d. Genomic data
   e. Proteomics and molecular interactions

20. Access to human clinical and genomic datasets should be provided with as few restrictions as possible while respecting ethical obligations to the patients and relevant medical and legal issues. If practically possible and compatible with the individual consent agreement used in the study, such data should be deposited in one of the major public access-controlled repositories such as EGA.

G - Dual use research of concern

21. Could your study fall under dual use research restrictions? Please check necessary documents (see link list at top right) and list of select agents and toxins (APHIS/CDC, see link list at top right). According to our biosecurity guidelines, provide a statement only if it could.

22. According to our biosecurity guidelines, provide a statement only if it could.