



eLife's transparent reporting form

We encourage authors to provide detailed information *within their submission* to facilitate the interpretation and replication of experiments. Authors can upload supporting documentation to indicate the use of appropriate reporting guidelines for health-related research (see [EQUATOR Network](#)), life science research (see the [BioSharing Information Resource](#)), or the [ARRIVE guidelines](#) for reporting work involving animal research. Where applicable, authors should refer to any relevant reporting standards documents in this form.

If you have any questions, please consult our Journal Policies and/or contact us: editorial@elifesciences.org.

Sample-size estimation

- You should state whether an appropriate sample size was computed when the study was being designed
- You should state the statistical method of sample size computation and any required assumptions
- If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

Sample size: This is a genome-wide study, therefore all data that passed their respective thresholds as described in the Methods section was used.

Replicates

- You should report how often each experiment was performed
- You should include a definition of biological versus technical replication
- The data obtained should be provided and sufficient information should be provided to indicate the number of independent biological and/or technical replicates
- If you encountered any outliers, you should describe how these were handled
- Criteria for exclusion/inclusion of data should be clearly stated
- High-throughput sequence data should be uploaded before submission, with a private link for reviewers provided (these are available from both GEO and ArrayExpress)

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:



Our analyses exclusively used publicly available datasets. All IDs of datasets used referenced in Supplementary Table 1. Only RNA-seq samples with sufficient sequencing depth (Supplementary Table 1) and good sequencing quality (assessed by FastQC, see Methods section) were included in this study. We only included physiologically equivalent tissues across species analysed. Only tissues with samples available in majority of species were included in study.

Our study used two background datasets: one biological (species-specific) and one technical (defined as background; see Methods section at Background Datasets). Analyses with these datasets can be found in the Results section and described in Figures 2-4.



Statistical reporting

- Statistical analysis methods should be described and justified
- Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
- For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
- Report exact p-values wherever possible alongside the summary statistics and 95% confidence intervals. These should be reported for all key questions and not only when the p-value is less than 0.05.

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

Non-parametric statistical tests were used to ensure no assumptions were made about underlying distribution of data. All statistical tests used are quoted in text and figure legends alongside p-value. Specific parameters of the statistical tests used can be found in the Methods section. Multiple test corrections was performed when appropriate (See Results and Methods sections).

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

Group allocation

- Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
- Indicate if masking was used during group allocation, data collection and/or data analysis

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn't apply to your submission:

N/A – as genome-wide analysis performed

Additional data files (“source data”)

- We encourage you to upload relevant additional data files, such as numerical data that are represented as a graph in a figure, or as a summary table
- Where provided, these should be in the most useful format, and they can be uploaded as “Source data” files linked to a main figure or table
- Include model definition files including the full list of parameters used
- Include code used for data analysis (e.g., R, MatLab)
- Avoid stating that data files are “available upon request”

Please indicate the figures or tables for which source data files have been provided:



Information of the datasets used can be found in the Supplementary Table 1.

We have deposited our code at <https://github.com/WeatherittLab/Evolution-of-circRNAs-in-Primates>

R version (4.0.5 ---"Shake and Throw")

python 2.7.15

cutadapt 1.18

bedtools v2.29.2

julia version 0.6.4

STAR_2.6.0c_mod1

Whippet v0.11.1

FastQC v0.11.8

samtools 1.3.1

CIRI_simulator (2014-08-08, <https://sourceforge.net/projects/ciri/files/>)

circExplorer2 (2.3.8)

CLEAR/circExplorer3 (<https://github.com/YangLab/CLEAR>)

find_circ (1.99)

CIRIquant (1.1.2)

HISAT2 version by Daehwan Kim (www.ccb.jhu.edu/people/infphilo)