***eLife’s* transparent reporting form**

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**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:

Not applicable. This work does not involve the use of any animal model or experiment that require sample-size estimation.

**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:

All sequencing data of *C. tropicalis* and *C. sojae* reported in this study have been submitted to NCBI under the BioProject accession numbers PRJNA596050 and PRJNA604451. The sequences of seven chromosomes of *C. tropicalis* are available through GenBank accession numbers CP047869-CP047875. The contig sequences of *C. sojae* are available through GenBank accession number WWPN00000000.

**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:

1. Figure 3D: Mann-Whitney U test was performed to compare orthoblock length at centromere proximal (CP), centromere distal (CD), and telomere proximal (TP) zones. Details are mentioned in the figure legend.

2. Figure 2—figure supplement 1: Mann-Whitney U test was performed to compare inter- and intrachromosomal contacts at the telomere with that of the genome average value. Details are mentioned in the figure legend.

3. Figure 4—figure supplement 2B: Mann-Whitney U test was performed to test the significance of difference between percent sequence identity of centromere elements and random genomic loci. Details are mentioned in the figure legend.

(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:

Not applicable. No animal experiment/clinical studies are included in this manuscript.

**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:

Source data for the following figures have been provided in an excel file (source data.xlsx).

1. Figure 3C, 3D

2. Figure 4C

3. Figure 1—figure supplement 2B

4. Figure 1—figure supplement 4B

5. Figure 4—figure supplement 2A, B, F, G

The inhouse codes used for 3C-seq data analysis are available at <https://github.com/Yao-Chen/candida-tropicalis-analysis>