

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our [Editorial Policies](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

- |                                     |                                                                                                                                                                                                                                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| n/a                                 | Confirmed                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> The exact sample size ( <i>n</i> ) for each experimental group/condition, given as a discrete number and unit of measurement                                                                                                                               |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly                                                                                                                                    |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> The statistical test(s) used AND whether they are one- or two-sided<br><i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i>                                                               |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> A description of all covariates tested                                                                                                                                                                                                                                |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons                                                                                                                                                   |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals) |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> For null hypothesis testing, the test statistic (e.g. <i>F</i> , <i>t</i> , <i>r</i> ) with confidence intervals, effect sizes, degrees of freedom and <i>P</i> value noted<br><i>Give P values as exact values whenever suitable.</i>                     |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings                                                                                                                                                           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes                                                                                                                                                |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Estimates of effect sizes (e.g. Cohen's <i>d</i> , Pearson's <i>r</i> ), indicating how they were calculated                                                                                                                                                          |

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data collection | Illumina NovaSeq 6000, Illumina MiniSeq, Light Cyclers 480-RealTime Cyclers, Data mining: Serratus explorer and palmID: Viral-RdRP Analysis ( <a href="https://serratus.io/toolkit">https://serratus.io/toolkit</a> )                                                                                                                                                                                                                                                                                                                                                                                            |
| Data analysis   | Trimmomatic V.0.4, DIAMOND v2.0.15, Geneious R.11.1.5, Bowtie2, ChimeraX 1.0, GraphPad Prism v9.5.1, MAFFT v7.450, MEGA11, Simple Sequence Editor v1.4, RDP4 v4.101, BEAST package v1.10.4, Tracer v1.7.1, DensiTree v3.0.2, ModelFinder, IQ-TREE v1.6.12, ParaFit, R v3.4.1, Rstudio environment v4.0.3, APE v4.1, Vegan v2.6-2, BaTS v0.9, eMPress v1, BayesTraits v3.0, Mesquite v3.81, NCBI BLAST, SRA toolkit v3.0.3, ParaFit tree sampler (custom code <a href="https://github.com/drexler-virus-epidemiology/parafittreesamplerR">https://github.com/drexler-virus-epidemiology/parafittreesamplerR</a> ) |

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio [guidelines for submitting code & software](#) for further information.

## Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our [policy](#)

Sequences generated in this study were uploaded to GenBank (accession nos. OP628141-OP628170, PP061230-PP061231, PP059213-PP059216, PP850113-PP850121, BK069861). Assembled genomes and mapped reads were uploaded to NCBI SRA (BioProject ID PRJNA1121230, SRR29347969-SRR29347979). Source data are provided in this paper.

## Research involving human participants, their data, or biological material

Policy information about studies with [human participants or human data](#). See also policy information about [sex, gender \(identity/presentation\)](#), [and sexual orientation](#) and [race, ethnicity and racism](#).

Reporting on sex and gender

Reporting on race, ethnicity, or other socially relevant groupings

Population characteristics

Recruitment

Ethics oversight

Note that full information on the approval of the study protocol must also be provided in the manuscript.

## Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☐ Behavioural & social sciences ☒ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

## Ecological, evolutionary & environmental sciences study design

All studies must disclose on these points even when the disclosure is negative.

|                          |                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Study description        | We explored the significance of Neotropical bats in the diversification and origin of morbilliviruses by combining field surveys, data mining, serologic testing, in vitro investigations, and evolutionary analyses.                                                                                                                                                                |
| Research sample          | Sampled wild bat species from Brazil and Costa Rica.<br>Non-human primates samples sent within flavivirus surveillance programs to the Reference Laboratory for Arboviruses and Hemorrhagic Viruses at the Oswaldo Cruz Institute in Brazil between 2017-2023 .<br>Publicly available genome sequences from GenBank and Sequence Read Archive (SRA).                                 |
| Sampling strategy        | The investigated wild bats and non-human primates for this study were sampled for virus surveillance.                                                                                                                                                                                                                                                                                |
| Data collection          | Species identification, sex, age, collection date and coordinates were performed by local trained field biologists.                                                                                                                                                                                                                                                                  |
| Timing and spatial scale | Investigated bat samples from Brazil were collected from 2007-2015, bat samples from Costa Rica were collected in 2016 and 2020, and non-human primate samples from 2017-2023.                                                                                                                                                                                                       |
| Data exclusions          | no data were excluded from analyses.                                                                                                                                                                                                                                                                                                                                                 |
| Reproducibility          | Kinetic experiments were evaluated in triplicates.<br>Cross-neutralization assays were performed in quadruples and in three independent experiments.<br>Neutralization assays for detection of antibodies against vampire bat morbillivirus was performed in duplicates.<br>All fusion assays were conducted in three independent experiments.<br>Field samples were sequenced once. |

|                                   |                                                                     |
|-----------------------------------|---------------------------------------------------------------------|
| Randomization                     | no randomization was performed.                                     |
| Blinding                          | Blinding was not relevant for this study.                           |
| Did the study involve field work? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

## Field work, collection and transport

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field conditions       | The investigated wild bats and non-human primates for this study were sampled for virus surveillance, so field conditions were not measured.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Location               | Brazil and Costa Rica. Please see Supplementary Tables 2 and 6 for coordinates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Access & import/export | <p>Exportation permits were obtained from the local authority in each country. In Brazil, authorizations for bat sampling were granted by ethics committee of the Universidade Estadual Paulista (UNESP) (009/2012), Instituto Ambiental do Paraná (235/10), the ethics committee of the Institute of Biomedical Science from the University of São Paulo (56–18–03/2014), Ministry of the Environment of Brazil (51231-1), and the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais (12751-2, 12751-3, 21748-1, 27346-2). In Costa Rica, the capture of vampire bats is part of the National Surveillance Bovine Rabies Program by the Animal Health Service (SENASA) following the Executive Decree 24405-MAG of June 8, 1995, of the Ministry of Agriculture of Costa Rica in which the control of vampire bats is declared compulsory. All procedures were carried out according to the “Ley de Bienestar de los Animales” (Ley No 7451 1994) and the International Convention for the Protection of Animals endorsed by Costa Rican Veterinary Law on the CR-NAHS (Ley No 8495 2006).</p> <p>Study involving NHP from Brazil was approved by the Ethics Committee of the Oswaldo Cruz Institute (CAAE90249218.6.1001.5248; approval no. 6.824.149). Samples were provided for surveillance and research purposes, in accordance with Resolution 2.998.362 IOC/Fiocruz. CITES export permits for the NHPs were granted by The Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA): 23BR046601/DF. CITES import permits were granted by the German Federal Agency for Nature Conservation: DE-E-02733/23-DE-E-02736/23, and sample import permits were granted by the Senate Department for Justice and Consumer Protection: EG I – 2023/62. The study involving archived formalin-fixed, paraffin-embedded (FFPE) material from NHP from the Department of Pathology at the School of Veterinary Medicine at the National University in Heredia, Costa Rica was approved by the National Commission for Biodiversity Management (CONAGEBIO) from the Ministry of Environment and Energy (approval no. R-CM-UNA-001-2024-OT-CONAGEBIO; export permit no. SINAC-SE-CUSBSE-056-2025).</p> |
| Disturbance            | not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

### Materials & experimental systems

| n/a                                 | Involved in the study                                           |
|-------------------------------------|-----------------------------------------------------------------|
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> Antibodies                  |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> Eukaryotic cell lines       |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Palaeontology and archaeology          |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> Animals and other organisms |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Clinical data                          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Dual use research of concern           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Plants                                 |

### Methods

| n/a                                 | Involved in the study                           |
|-------------------------------------|-------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> ChIP-seq               |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> Flow cytometry         |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> MRI-based neuroimaging |

## Antibodies

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antibodies used | anti-measles serum (product no. 97/648, NIBSC), dilutions 200 to 0.4 mIU/mL<br>anti-canine distemper serum (product no. CDS, NIBSC), dilutions 100 to 0.2 IU/mL<br>anti-rabbit IgG Cy3-conjugated polyclonal antibody (catalogue no. 111-165-144, Jackson ImmunoResearch), 1:400<br>anti-MarMV F rabbit polyclonal serum (custom made and commercially produced by Eurogentec, Belgium), 1:100<br>anti-MarMV H rabbit polyclonal serum (custom made and commercially produced by Eurogentec, Belgium), 1:100                                                     |
| Validation      | We did not validate the antibodies used in this study, but that information is provided by the manufacturer:<br><br>- anti-measles serum (97/648, NIBSC) - 3rd International standard: <a href="https://nibsc.org/products/brm_product_catalogue/detail_page.aspx?catid=97/648">https://nibsc.org/products/brm_product_catalogue/detail_page.aspx?catid=97/648</a><br>- anti-canine distemper serum (CDS, NIBSC) - WHO International Standard: <a href="https://nibsc.org/products/brm_product_catalogue/">https://nibsc.org/products/brm_product_catalogue/</a> |

detail\_page.aspx?catid=CDS

- anti-rabbit IgG Cy3-conjugated polyclonal antibody (Jackson ImmunoResearch) - <https://www.jacksonimmuno.com/catalog/products/111-165-003>

For the custom made and commercially produced anti-MarMV F and H antibodies, the company provided antiserum analyses using an F and H peptide-based indirect ELISA. The antisera were used at 100 to 218700-fold dilutions and the interpretation of the results based on Eurogentec interpretation criteria of the performed ELISAs, the antisera were good.

## Eukaryotic cell lines

Policy information about [cell lines and Sex and Gender in Research](#)

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cell line source(s)                                                  | <ul style="list-style-type: none"> <li>- Vero 76 cells (CCLV-RIE 228), provided by Sven Reiche from Friedrich-Loeffler-Institut (Greifswald, Germany)</li> <li>- Vero human CD150, kindly provided by Yusuke Yanagi from Kyushu University (Fukuoka, Japan)</li> <li>- B95 cells (RRID: CVCL_4116) kindly provided from Rik de Swart from Erasmus MC (Rotterdam, Netherlands).</li> <li>- NCI-H358 cells (95111733-1VL, Merck, Germany) were bought.</li> <li>- Vero E6 cells (C1008, ATCC CRL-1586) are cell lines commonly used in our group.</li> <li>- Vero vampire bat CD150 cells were produced in this study.</li> </ul> |
| Authentication                                                       | cell lines were not authenticated in this study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mycoplasma contamination                                             | Cell line aliquots were sent regularly for qPCR-based mycoplasma testing during experiments (Eurofins Genomics, Germany). All cell lines tested negative during the experiments.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Commonly misidentified lines<br>(See <a href="#">ICLAC</a> register) | No commonly misidentified cell lines were used in this study.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Animals and other research organisms

Policy information about [studies involving animals](#); [ARRIVE guidelines](#) recommended for reporting animal research, and [Sex and Gender in Research](#)

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Laboratory animals      | not applicable, laboratory animals were not used in this study.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Wild animals            | <p>Bat sampling was performed using mist nets at roost or foraging sites at different locations in Costa Rica and Brazil. After capturing, animals were identified, anesthetized, euthanized and dissected immediately by a trained field biologist. The euthanasia of the bats followed the AVMA 2020 Guidelines for the Euthanasia of Animals. Samples were stored in separate tubes with and without RNAlater for each organ at -20°C 2 to 3 days before being transferred to -80°C. We also included bats that were found dead in the wild and were sent to Rabies surveillance laboratories in Brazil.</p> <p>Sampled bat species include: <i>Artibeus literatus</i>, <i>Artibeus planirostris</i>, <i>Carollia brevicauda</i>, <i>Carollia perspicillata</i>, <i>Cynomops planirostris</i>, <i>Desmodus rotundus</i>, <i>Eptesicus furinalis</i>, <i>Eumops glaucinus</i>, <i>Eumops perotis</i>, <i>Glossophaga soricina</i>, <i>Molossus currentium</i>, <i>Molossus molossus</i>, <i>Molossus rufus</i>, <i>Myotis nigricans</i>, <i>Platyrrhinus lineatus</i>, and <i>Tadarida brasiliensis</i>.</p> <p>Age of bats sampled include: Adult, juvenile, lactating new born, and fetus. Age data was not collected for all animals. Age data is provided in the supplementary table S2</p> <p>All non-human primates analysed in this study were samples sent within flavivirus surveillance programs to the Reference Laboratory for Arboviruses and Hemorrhagic Viruses at the Oswaldo Cruz Institute in Brazil between 2017-2023.</p> <p>Non-human primates sent to the Reference Laboratory for Arboviruses and Hemorrhagic Viruses at the Oswaldo Cruz Institute in Brazil and analysed in this study includes:</p> <p><i>Alouatta caraya</i>, <i>Alouatta guariba clamitans</i>, <i>Ateles marginatus</i>, <i>Ateles paniscus</i>, <i>Callithrix aurita</i>, <i>Callithrix geoffroyi</i>, <i>Callithrix jacchus</i>, <i>Callithrix penicillata</i>, <i>Cebus apella</i>, <i>Leontopithecus</i> sp., <i>Pithecia</i> sp., <i>Plecturocebus cupreus</i>, and <i>Sapajus nigriratus</i></p> <p>Age data of the non-human primates was not collected.</p> |
| Reporting on sex        | Sex and age data of bats were assigned by a trained field biologist. Sex data is provided in the supplementary table S2. Bats were categorized as Female (n=547) or Male (n=629), although sex data was not collected for all sampled bats. Both female (n=10) and male (n=13) bats were found positive to morbilliviruses. Sex data was not collected for any of the non-human primates. However, no sex- or gender-based analysis was conducted as data was incomplete and analyses are not relevant to the conclusions from our study.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Field-collected samples | Field-collected specimens were kept at -80°C. Specimens were used for RNA extraction and screened for presence of paramyxovirus RNA. Selected positive samples (low Ct value) were sequenced to obtain complete genomes, virus isolation was attempted,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ethics oversight        | <p>Export permits were obtained from the local authority in each country. In Brazil, authorizations for bat sampling were granted by ethics committee of the Universidade Estadual Paulista (UNESP) (009/2012), Instituto Ambiental do Paraná (235/10), the ethics committee of the Institute of Biomedical Science from the University of São Paulo (56-18-03/2014), Ministry of the Environment of Brazil (51231-1), and the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais (12751-2, 12751-3, 21748-1, 27346-2).</p> <p>In Costa Rica, the capture of vampire bats is part of the National Surveillance Bovine Rabies Program by the Animal Health Service (SENASA) following the Executive Decree 24405-MAG of June 8, 1995, of the Ministry of Agriculture of Costa Rica in which the control of vampire bats is declared compulsory. All procedures were carried out according to the "Ley de Bienestar de los Animales" (Ley No 7451 1994) and the International Convention for the Protection of Animals endorsed by Costa Rican Veterinary Law on the CR-NAHS (Ley No 8495 2006).</p> <p>Study involving NHP from Brazil was approved by the Ethics Committee of the Oswaldo Cruz Institute (CAAE90249218.6.1001.5248;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

approval no. 6.824.149). Samples were provided for surveillance and research purposes, in accordance with Resolution 2.998.362 IOC/Fiocruz. The study involving archived formalin-fixed, paraffin-embedded (FFPE) material from NHP from the Department of Pathology at the School of Veterinary Medicine at the National University in Heredia, Costa Rica was approved by the National Commission for Biodiversity Management (CONAGEBIO) from the Ministry of Environment and Energy (approval no. R-CM-UNA-001-2024-OT-CONAGEBIO; export permit no. SINAC-SE-CUSBSE-056-2025).

No data on the housing, maintenance, photoperiod, and end-of-experiment protocols are provided as all samples were field-collected. Captured bats were immediately identified, anesthetized, and euthanized by trained biologists. The euthanasia of the bats followed the AVMA 2020 Guidelines for the Euthanasia of Animals. No data was collected for the period of time or storage conditions of animals that were found dead in the wild before their sending to a Rabies surveillance laboratory in Brazil (for bats) or the Reference laboratory for Arboviruses and Hemorrhagic viruses at the Oswaldo Cruz Institute in Brazil (for non-human primates).

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Plants

|                       |                |
|-----------------------|----------------|
| Seed stocks           | not applicable |
| Novel plant genotypes | not applicable |
| Authentication        | not applicable |