

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

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

Data analysis

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](#)

All data are contained within the manuscript and Supplementary Data files. All uncropped immunoblots and original data that support the findings of this study can be found in Supplementary information and Supplementary data files, respectively

Human research participants

Policy information about [studies involving human research participants and Sex and Gender in Research](#).

Reporting on sex and gender	<input type="text" value="None"/>
Population characteristics	<input type="text" value="None"/>
Recruitment	<input type="text" value="None"/>
Ethics oversight	<input type="text" value="None"/>

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

Life sciences study design

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

Sample size	<input type="text" value="Replicates are biologically representing independent experimental subject. Experiments were duplicated at least 3 times and sample size was qualified according to methodology and was specialized in figure legends."/>
Data exclusions	<input type="text" value="No data were excluded"/>
Replication	<input type="text" value="Each experiment was replicated at least 3 times"/>
Randomization	<input type="text" value="All participants were allocated to groups randomly"/>
Blinding	<input type="text" value="The investigators were blinded to group allocation during data collection and analysis"/>

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	Involvement	Material/System
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Antibodies
<input checked="" type="checkbox"/>	<input 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

Methods

n/a	Involvement	Method
<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	<input type="text" value="Antibody (Dilution, Catalog #, Supplier, are all shown below:
Akt (1:1000, 4685, Cell Signaling Technology (CST))
p-Akt Ser473 (1:1000, 4060, CST)
p-Akt Thr308 (1:1000, 13038S, CST)
AMPKα (1:1000, 5832, CST)
p-AMPKα Thr172 (1:1000, 2535, CST)
mTOR (1:1000, 2983, CST)"/>
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p-mTOR (1:1000, 2976, CST)
 p-p70 S6K Thr389 (1:1000, 9205, CST)
 p70 S6K (1:1000, 2708, CST)
 LEF1 (1:1000, ab85052, Abcam)
 β-catenin (1:1000, ab32572, Abcam)
 WE6 (1:5, 348 WE6-s, Developmental Studies Hybridoma Bank)
 β-actin (1:2000, ab8826, Abcam).
 BrdU solvent (20 μL of 20 mM solution, B5002, Sigma)
 β-catenin antibody (1:200, Cat. ab32572, RRID: AB_725966, Abcam)
 Alexa Fluor 488-conjugated goat anti-rabbit IgG secondary antibody (1:400, Jackson ImmunoResearch, West Grove, PA, USA, Cat.111-545-003, RRID: 334 AB_2338046)
 DAPI (1:2500, Cat.D9542, Merck, Germany)
 Anti-BrdU (1:250, ab6326, Abcam, USA)

Validation

For histology, all antibodies were commercially available, tested and validated; in our laboratory, we additionally established staining on control slides of Gecko organs that should express the antigen (immunofluorescence staining and antibody dilution titration on control slides). For all stainings, we used positive control slides (=tissue that should express the antigen) and did negative controls (no primary ab / no secondary ab).
 For western blot, all antibodies were commercially available, tested and validated; in our laboratory, we additionally tested the expression of the antigens in Gecko tissues to determine the suitable dilution, incubation and exploration details.

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	Adult <i>G. japonicus</i> with intact tails were grouped into control and experimental groups and the average body weight was 4.4 ± 0.495 g.
Wild animals	No wild animals were used in this study.
Reporting on sex	Half male and half female individuals were enrolled in the test.
Field-collected samples	No field collected samples were used in this study.
Ethics oversight	All animal studies were undertaken in accordance with Animal Welfare Guidance of China for the protection of animals used for experimental purposes. All experiments were approved by the Institutional Animal Care and Use Committee of the Nantong University.

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