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Reporting Summary

Nature Research 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 Research policies, see [Authors & Referees](#) 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

Thermo Fischer Exactive Series (v.2.8 SP1)

Data analysis

Byonic mass spectrometry search software (v.3.2.0), Skyline Targeted Mass Spec Environment (v.4.2), R Project for Statistical Computing (v.3.5.1), Stringr String Manipulator in R (v.1.3.1), Readr Data Reader for R (v.1.1.1), Ggplot2 figure creator for R (v.3.1.0), VennDiagram package in R (v.1.6.20), Plyr Data Manipulation package in R (v.1.8.4), Dplyr Data Manipulation in R (v.0.7.7), Python Programming Language (v.2.7.14), SciPy Statistical Functions in Python (v.1.16.0), StatsModels Statistical Methods in Python (v.0.9.0)

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/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [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 list of figures that have associated raw data
- A description of any restrictions on data availability

All data produced or analyzed for this study are included in the published article (and its supplementary information files) or are available from the corresponding author on reasonable request.

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	No statistical methods were used to predetermine sample size. Sample size was selected according to literature showing similar methods of analysis.
Data exclusions	No data were excluded.
Replication	All mass spectrometry, biochemistry, and cell biology studies were successfully replicated on different days to verify reproducibility of the experimental findings.
Randomization	All experiments were performed on mammalian cells grown under identical conditions so randomization was not applicable.
Blinding	All experiments were performed on mammalian cells grown under identical conditions so blinding was 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		Methods	
n/a	Involved in the study	n/a	Involved in the study
<input type="checkbox"/>	<input checked="" type="checkbox"/> Antibodies	<input type="checkbox"/>	ChIP-seq
<input type="checkbox"/>	<input checked="" type="checkbox"/> Eukaryotic cell lines	<input type="checkbox"/>	Flow cytometry
<input checked="" type="checkbox"/>	<input type="checkbox"/> Palaeontology	<input type="checkbox"/>	MRI-based neuroimaging
<input checked="" type="checkbox"/>	<input type="checkbox"/> Animals and other organisms		
<input checked="" type="checkbox"/>	<input type="checkbox"/> Human research participants		
<input checked="" type="checkbox"/>	<input type="checkbox"/> Clinical data		

Antibodies

Antibodies used	<p>ANTI-FLAG antibody produced in rabbit, Sigma Aldrich, Cat.#:F7425, Lot#:078M-4886V, DIL: 1:1,000</p> <p>The following antibodies were purchased from Cell Signaling Technology (CST) for phosphotyrosine studies:</p> <p>Phospho-tyrosine (pY): P-Tyr-100 biotinylated, CST#:9417S, Lot#:9, DIL:1:1,000</p> <p>pPKM: Phospho-PKM (Y105) Rabbit Ab, CST#:3827S, Lot#:3, DIL: 1:1,000</p> <p>PKM: PKM Rabbit Ab, CST#:3198S, Lot#:4, DIL: 1:1,000</p> <p>pSTAT3: Phospho-STAT3 (Y705) Rabbit mAb, CST #9145S, Lot#:34, DIL: 1:1,000</p> <p>STAT3: STAT3 Mouse mAb, CST #9139S, Lot#:12, DIL: 1:1,000</p> <p>pCTNND1: Phospho-Catenin δ-1 (Tyr228) Rabbit Ab, CST #2911, Lot#:1, DIL: 1:1,000</p> <p>CTNND1: Catenin δ-1 Rabbit Ab, CST #4989, Lot#:2, DIL: 1:1,000</p> <p>GAPDH: GAPDH Rabbit mAb, CST #2118S, Lot#:10, DIL: 1:1,000</p> <p>The following secondary antibodies were used for fluorescence detection:</p> <p>Goat anti-Rabbit IgG (H+L) Secondary Antibody, DyLight 550, Cat.#:84541, Lot#:TC264353, DIL: 1:10,000</p> <p>Goat Anti-Mouse IgG (H+L) Secondary Antibody, DyLight 650 Conjugated, Invitrogen, Cat.#:84545, Lot#:TG266624A, DIL: 1:10,000</p> <p>Streptavidin DyLight 550 Conjugated, Thermo Scientific, Cat.#:84542, Lot#:TF263732, DIL:1:10,000</p>
Validation	<p>ANTI-FLAG antibody produced in rabbit, Sigma Aldrich, Cat.#:F7425, Validated against FLAG-tagged proteins per manufacturers website.</p> <p>Phospho-tyrosine (pY): P-Tyr-100 biotinylated, Validated against Sodium Vanadate treated 3T3 cells per manufacturers website.</p> <p>pPKM: Phospho-PKM (Y105) Rabbit Ab, Validated by in vitro kinase assay against PKM-Y105 and PKM-Y105F. Validated against FGF activated H1299, A549 and DU-145 cells per manufacturers website.</p>

PKM: PKM Rabbit Ab, CST#:3198S, Validated against human PKM in HeLa cells per manufacturer website.

pSTAT3: Phospho-STAT3 (Y705) Rabbit mAb, CST#:9145S, Validated against human pSTAT3 in IFN-alpha treated Jurkats and HeLa cells, and EGF treated A431 cells per manufacturer website.

STAT3: STAT3 Mouse mAb, CST#:9139S, Validated against human STAT3 in HeLa cells per manufacturer website.

pCTNND1: Phospho-Catenin δ-1 (Tyr228) Rabbit Ab, CST#:2911, Validated against human pCTNND1 in EGF treated A431 cells per manufacturer website.

CTNND1: Catenin δ-1 Rabbit Ab, CST#:4989, Validated against human CTNND1 in MDA-MB-231 and 3T3 cells per manufacturer website.

GAPDH: GAPDH Rabbit mAb, CST #2118S, Validated against human GAPDH in HeLa, HUVEC and 3T3 cells per manufacturer website.

Eukaryotic cell lines

Policy information about [cell lines](#)

Cell line source(s)

Jurkats, HEK293T, A549, H82 were purchased from ATCC, DM93 were originally created by Dr. Seigler at Duke University Medical Center. <http://www.jimmunol.org/content/jimmunol/142/9/3329.full.pdf>

Authentication

None of the cell lines used were authenticated.

Mycoplasma contamination

Cell lines were not tested for mycoplasma contamination

Commonly misidentified lines
(See [ICLAC](#) register)

Commonly misidentified cell lines were not used in this study.