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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 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	Mass spectrometry: Agilent MassHunter Qualitative Analysis 10.0 HPLC: Agilent OpenLAB revision A.02.16 Nucleotide and protein sequences were identified with the BLAST suite of programs from the National Center for Biotechnology Information (NCBI). Salmonella genomes used for distribution analysis was obtained from the SalFoS database.
Data analysis	Nucleotide and protein sequences were identified with the BLAST suite of programs from the National Center for Biotechnology Information (NCBI). Bioinformatics tools : ESPript 3.0, ClustalW v.2.0, Phylogeny.fr, Dali Mass-spectrometry: Agilent MassHunter Qualitative Analysis 10.0 HPLC: Agilent OpenLAB revision A.02.16 Protein modelling: PyMol - 2.3.4, ColabFold v1.5.5

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 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

Complete

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	Biochemical experiments producing qualitative results were performed at least three times to ensure reproducibility. These sample sizes were chosen as sufficient to represent any variance present in the samples but also to be within the technically practical limits for performing of the experiment.
Data exclusions	no data was excluded
Replication	All in vitro enzyme assays were performed at least 3 times with the same results. All MS validations of reactions products were performed at least 2 times with comparable results. All SDS-PAGE and western blots were performed in triplicate qPCR was performed in triplicate with the experiment performed twice with two different genomic DNA preparations
Randomization	not required for this biochemical study
Blinding	not required for this biochemical study

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
☐	☒ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☒	☐ Human research participants
☒	☐ Clinical data
☒	☐ Dual use research of concern

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Antibodies

Antibodies used	Mouse anti penta-histidine MAb. Supplier: Qiagen. Catalog number: 34660. Lot: 172019951 Mouse anti FLAG M2 MAb. Supplier: Sigma. Catalog number: F3165. Lot: SLCM4081 Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Mouse IgG (H+L). Supplier: Jackson ImmunoResearch Laboratories. Catalog Number: 115-055-003. Lot: 138204. Alkaline Phosphatase AffiniPure Goat Anti-Rabbit IgG (H+L). Supplier: Jackson ImmunoResearch Laboratories. Catalog Number: 111-055-003. Lot: 86-172-030422. Rabbit anti-T1 and Rabbit anti-T1 Ribf

Validation

Antibodies were validated by manufacturer
Anti-penta-His: https://www.qiagen.com/us/products/discovery-and-translational-research/protein-purification/tagged-protein-expression-purification-detection/anti-his-antibodies-bsa-free/?cmpid=PC_DA_NON_BIOCOMPARE_ProductListing_0121_RD_MarketPlace_ProductD&catno=34660
Mouse anti-FLAG: https://www.sigmaaldrich.com/CA/en/product/sigma/f3165

Goat-anti mouse AP secondary and Goat-anti-rabbit AP secondary "Based on immunoelectrophoresis and/or ELISA, the antibody reacts with whole molecule mouse IgG. It also reacts with the light chains of other mouse immunoglobulins. No antibody was detected against non-immunoglobulin serum proteins. The antibody may cross-react with immunoglobulins from other species."

Rabbit anti-T1 and Rabbit anti-T1 Ribf were validated by western blot with recombinant T1 producing E. coli and non-producing controls