

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 (n) 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 <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 type="checkbox"/>	<input checked="" 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. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted <i>Give P values as exact values whenever suitable.</i>
<input checked="" type="checkbox"/>	<input 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 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	Multi Fiber photometry system (a custom-written MATLAB software, ThinkerTech Nanjing Bioscience, China), J-Watcher (https://www.jwatcher.ucla.edu/ , Dan Blumstein's Lab & the late Christopher Evans' lab, Sydney), Smart video tracking system (V 3.0.06, Panlab Harvard Apparatus®, Spain), Clampex 10.2, pClampfit 10.5 and Mantra 1.0.
Data analysis	inform 2.6.0, MatLab 2019a, SPSS 20.0, GraphPad Prism version 6.0, image J (V1.8.0, National Institutes of Health, USA) and pClampTM software (Axon company, USA).

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](#)

The data that supporting the findings of this study are available within the article or supplementary materials.

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	No human samples were used in this study.
Reporting on race, ethnicity, or other socially relevant groupings	No human samples were used in this study.
Population characteristics	No human samples were used in this study.
Recruitment	No human samples were used in this study.
Ethics oversight	No human samples were used in this study.

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)

Life sciences study design

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

Sample size	Sample size needs to meet statistical analysis requirements, ethical standards and published literatures.
Data exclusions	Data were excluded if the fiber tips placement were not located in the target brain regions, or failed virus expression. Data were excluded if the cell access resistance >30MΩ in whole-cell patch clamp recording.
Replication	Experiments were performed with sufficient animals per group to demonstrate statistical significance. And different batches of animals were used to replicate the same experiments. It is indicated that the analysis results was consistent.
Randomization	Animals were randomly assigned to different treatment groups.
Blinding	Consolation and aggression behaviors were scored by a trained observer blind to experimental condition using J-Watcher software such as ablation and genetic manipulations studies. The experimenter was not blinded to carry out fiber photometry recordings in vivo, electrophysiological recordings, counting c-Fos positive neurons in the MeApd, MeApv, AI and VMHvl 90 min after consolation and aggression, c-Fos+(AAV1 tracer / mWGA tracer)+ neurons in the AI / VMHvl that receive monosynaptic antegrade projections from the MeA 90 min after consolation and aggression, AI / VMHvl-projecting MeA (OXTR) neurons, and co-labeled neurons of c-Fos and AI / VMHvl-projecting MeA OXTR neurons 90 min after consolation / aggression respectively.

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	Included in the study	n/a	Included in the study
<input type="checkbox"/>	<input checked="" type="checkbox"/> Antibodies	<input checked="" type="checkbox"/>	<input type="checkbox"/> ChIP-seq
<input checked="" type="checkbox"/>	<input type="checkbox"/> Eukaryotic cell lines	<input checked="" type="checkbox"/>	<input type="checkbox"/> Flow cytometry
<input checked="" type="checkbox"/>	<input type="checkbox"/> Palaeontology and archaeology	<input checked="" type="checkbox"/>	<input type="checkbox"/> MRI-based neuroimaging
<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		

Antibodies

Antibodies used	<p>The primary antibodies included: mouse anti-OXT (1:7500; MAB5296, Millipore, Germany), rabbit anti-c-Fos (Abcam, ab190289, 1:1500), mouse anti-VGlu2 (1:500, ab79157, abcam, UK), rabbit anti-GABA (1:550, PA5-32241, Thermo Fisher, USA) and rabbit anti-OXTR (1:100, XM_041642487.1, Mabioway For Discovery, China.).</p> <p>The secondary antibodies (1:400): anti-rabbit goat conjugated with Cy3 (AB_2338000), AF-488 (AB_2338000), and AF-647 (AB_2338072), and anti-mouse goat conjugated with Cy3 (AB_2339065) and AF-488 (AB_2339072) were all purchased from Jackson, USA; anti-rabbit goat conjugated with AF-405 (A-48254) was purchased from ThermoFisher, USA.</p>
Validation	<p>All antibodies (except for rabbit anti-OXTR antibody) were purchased from commercial companies and have been extensively validated by the providers and in the previous studies.</p> <p>For mouse anti-OXT, please see reference (He, Zhang et al. 2021; doi: 10.1523/JNEUROSCI.2864-20.2021);</p> <p>For rabbit anti-c-Fos, please see reference (Zhao, Liu et al. 2022; doi: 10.1016/j.celrep.2022.111824);</p> <p>For mouse anti-VGlu2, please see reference (Velasco, Florido et al. 2022; doi: 10.1038/s41467-022-31442-w);</p> <p>For rabbit anti-GABA, please see reference (Ryu, Nagappan et al. 2021; doi: 10.1016/j.celrep.2021.109001);</p> <p>For rabbit anti-OXTR, according to epitope sequences site from mice published publicly in the previous research (DOI: 1038.14402/nature2015) by professor Robert Froemke, we selected homologous OXTR amino acid sequence from voles as epitopes for synthesizing antibody: KLH-CYS-EGSAAGGAGRAALARVS SVKLISKAKI (Contract number: MR-CY-20220604-001), which is specific and applicable for voles. And FISH was combined with IF technology to successfully demonstrated the high specificity and efficiency of OXTR antibody in the present study.</p> <p>The secondary antibodies were validated by the manufacturers as below:</p> <p>For anti-rabbit goat conjugated with Cy3 (AB_2338000), https://www.jacksonimmuno.com/catalog/products/111-165-003/Goat-Rabbit-IgG-HL-Cyanine-Cy3;</p> <p>For anti-rabbit goat conjugated with AF-488 (AB_2338052), https://www.jacksonimmuno.com/catalog/products/111-545-144;</p> <p>For anti-rabbit goat conjugated with AF-647 (AB_2338072), https://www.jacksonimmuno.com/catalog/products/111-605-003;</p> <p>For anti-mouse goat conjugated with Cy3 (AB_2339065), https://www.jacksonimmuno.com/catalog/products/205-165-108;</p> <p>For anti-mouse goat conjugated with AF-488 (AB_2339072), https://www.jacksonimmuno.com/catalog/products/205-545-108;</p> <p>For anti-rabbit goat conjugated with AF-405 (A-48254), https://www.thermofisher.cn/cn/zh/antibody/product/Goat-anti-Rabbit-IgG-H-L-Highly-Cross-Adsorbed-Secondary-Antibody-Polyclonal/A48254.</p>

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	The lab-bred F2 generation mandarin voles (wild individuals captured in Lingbao city, Henan Province, China) were used for these experiments. The mandarin voles were maintained under standard laboratory conditions (12 h light-dark cycle, 23 ± 3 ° C, food and water ad libitum).
Wild animals	No wild animals were involved in this study.
Reporting on sex	The findings of this study apply to male because only male can exhibited stable higher consolation to siblings and higher aggression to unfamiliar intruders.
Field-collected samples	No field-collected samples were involved in this study.
Ethics oversight	All procedures were in accordance with the Guide for the Care and Use of Laboratory Animals of China and reviewed by the Institutional Animal Care and Use Committee at Shaanxi Normal University. All surgeries were performed under isoflurane anesthesia.

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

Plants

Seed stocks	No plants samples were used in this study.
Novel plant genotypes	No plants samples were used in this study.
Authentication	No plants samples were used in this study.