# Resource Summary Report

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# CoCoMac

RRID:SCR_007277
Type: Tool

## Proper Citation

CoCoMac (RRID:SCR_007277)

## Resource Information

**URL:** http://cocomac.g-node.org/main/index.php?

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**Description:** Online access (html or xml) to structural connectivity ("wiring") data on the Macaque brain. The database has become by far the largest of its kind, with data extracted from more than four hundred published tracing studies. The main database, contains data from tracing studies on anatomical connectivity in the macaque cerebral cortex. Also available are a variety of tools including a graphical simulation workbench, map displays and the CoCoMac-Paxinos-3D viewer. Submissions are welcome. To overcome the problem of divergent brain maps ORT (Objective Relational Transformation) was developed, an algorithmic method to convert data in a coordinate- independent way based on logical relations between areas in different brain maps. CoCoMac data is used to analyze the organization of the cerebral cortex, and to establish its structure- function relationships. This includes multi-variate statistics and computer simulation of models that take into account the real anatomy of the primate cerebral cortex. This site * Provides full, scriptable open access to the data in CoCoMac (you must adhere to the citation policy) * Powers the graphical interface to CoCoMac provided by the Scalable Brain Atlas * Sports an extensive search/browse wizard, which automatically constructs complex search queries and lets you further explore the database from the results page. * Allows you to get your hands dirty, by using the custom SQL query service. * Displays connectivity data in tabular form, through the axonal projections service. CoCoMac 2 was initiated at the Donders Institute for Brain, Cognition and Behaviour, and is currently supported by the German neuroinformatics node and the Computational and Systems Neuroscience group at the Juelich research institute.

**Abbreviations:** CoCoMac

**Synonyms:** CoCoMac Brain Connectivity Database, Collations of Connectivity Data on the Macaque Brain, CoCoMac (Collations of Connectivity Data on the Macaque Brain)

**Resource Type:** data or information resource, database

**Defining Citation:** PMID:23293600, PMID:11545697, PMID:15319511, PMID:15971361, PMID:10703043

**Keywords:** brain, macaque, non-human primate, connectivity, microcircuitry, prefrontal cortex, neural network, structure, function, neuroanatomy, brain circuitry, axonal projection, data repository, visualization, atlas application, computational neuroscience, magnetic resonance, ontology, php, tractography, web environment, software, FASEB list

**Funding:** DFG ;
Heinrich-Heine University of Dusseldorf; Dusseldorf; Germany ;
Wellcome Trust

**Availability:** Open Access

**Resource Name:** CoCoMac

**Resource ID:** SCR_007277

**Alternate IDs:** nif-0000-00022

**Alternate URLs:** http://www.nitrc.org/projects/cocomac, http://134.95.56.239/home.asp

**Old URLs:** http://cocomac.org/, http://cocomac.g-node.org/drupal/

**Record Creation Time:** 20220129T080240+0000

**Record Last Update:** 20260729T044146+0000

## Ratings and Alerts

No rating or validation information has been found for CoCoMac.

No alerts have been found for CoCoMac.

## Data and Source Information

**Source:** SciCrunch Registry

## Usage and Citation Metrics

We found 57 mentions in open access literature.

**Listed below are recent publications.** The full list is available at PRECISE-TBI .

Hoffner G, et al. (2025) Transcranial direct current stimulation modulates primate brain dynamics across states of consciousness. eLife, 13.

Gonz??lez OC, et al. (2025) Intrinsic ion dynamics underlies the temporal nature of resting-state functional connectivity. bioRxiv : the preprint server for biology.

Ping A, et al. (2025) Brainwide mesoscale functional networks revealed by focal infrared neural stimulation of the amygdala. National science review, 12(4), nwae473.

Milisav F, et al. (2025) A simulated annealing algorithm for randomizing weighted networks. Nature computational science, 5(1), 48.

Luppi AI, et al. (2025) Benchmarking macaque brain gene expression for horizontal and vertical translation. Science advances, 11(9), eads6967.

Imam FT, et al. (2025) Developing a multiscale neural connectivity knowledgebase of the autonomic nervous system. Frontiers in neuroinformatics, 19, 1541184.

Ping A, et al. (2024) Brainwide mesoscale functional networks revealed by focal infrared neural stimulation of the amygdala. bioRxiv : the preprint server for biology.

Gomez C, et al. (2024) Deep learning models reveal the link between dynamic brain connectivity patterns and states of consciousness. Scientific reports, 14(1), 31606.

Pronold J, et al. (2024) Multi-scale spiking network model of human cerebral cortex. Cerebral cortex (New York, N.Y. : 1991), 34(10).

Sebenius I, et al. (2023) Robust estimation of cortical similarity networks from brain MRI. Nature neuroscience, 26(8), 1461.

Bazinet V, et al. (2023) Assortative mixing in micro-architecturally annotated brain connectomes. Nature communications, 14(1), 2850.

Tasserie J, et al. (2022) Deep brain stimulation of the thalamus restores signatures of consciousness in a nonhuman primate model. Science advances, 8(11), eabl5547.

Pang JC, et al. (2022) Evolutionary shaping of human brain dynamics. eLife, 11.

Conklin BD, et al. (2021) Organization of areal connectivity in the monkey frontoparietal network. NeuroImage, 241, 118414.

Signorelli CM, et al. (2021) Hierarchical disruption in the cortex of anesthetized monkeys as a new signature of consciousness loss. NeuroImage, 227, 117618.

Meier SK, et al. (2021) Meta-analytic connectivity modelling of deception-related brain regions. PloS one, 16(8), e0248909.

Novelli L, et al. (2021) Inferring network properties from time series using transfer entropy and mutual information: Validation of multivariate versus bivariate approaches. Network neuroscience (Cambridge, Mass.), 5(2), 373.

He B, et al. (2020) Fine-Grained Topography and Modularity of the Macaque Frontal Pole Cortex Revealed by Anatomical Connectivity Profiles. Neuroscience bulletin, 36(12), 1454.

Chen Y, et al. (2020) A Large-Scale High-Density Weighted Structural Connectome of the Macaque Brain Acquired by Predicting Missing Links. Cerebral cortex (New York, N.Y. : 1991), 30(9), 4771.

Ryan JD, et al. (2020) Modeling the influence of the hippocampal memory system on the oculomotor system. Network neuroscience (Cambridge, Mass.), 4(1), 217.