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The EBRAINS Data & Knowledge services: exploring synergies with EU's SciLake project

Open Science FAIR 2023, Madrid
Ingrid Reiten
University of Oslo
26.10.2023

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Scope

Human Brain Project

Horizon 2020 project
2013 - 2023

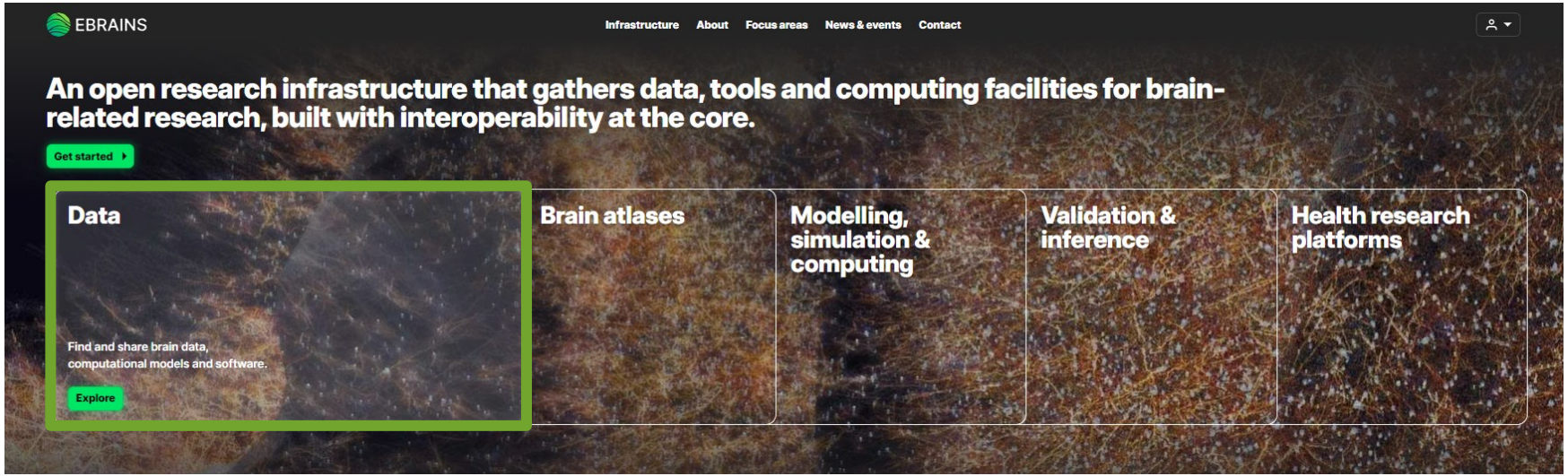
EBRAINS

Digital research infrastructure for brain-related research, created by the HBP

Included in the ESFRI Roadmap 2021

Horizon Europe project
2023 – 2026

The EBRAINS Research Infrastructure



ebrains.eu

- EBRAINS delivers data and services for brain-related research

The **EBRAINS Data & Knowledge services** provide tools and resources to share, find and use neuroscience data to accelerate reproducibility, and connect the global research community.

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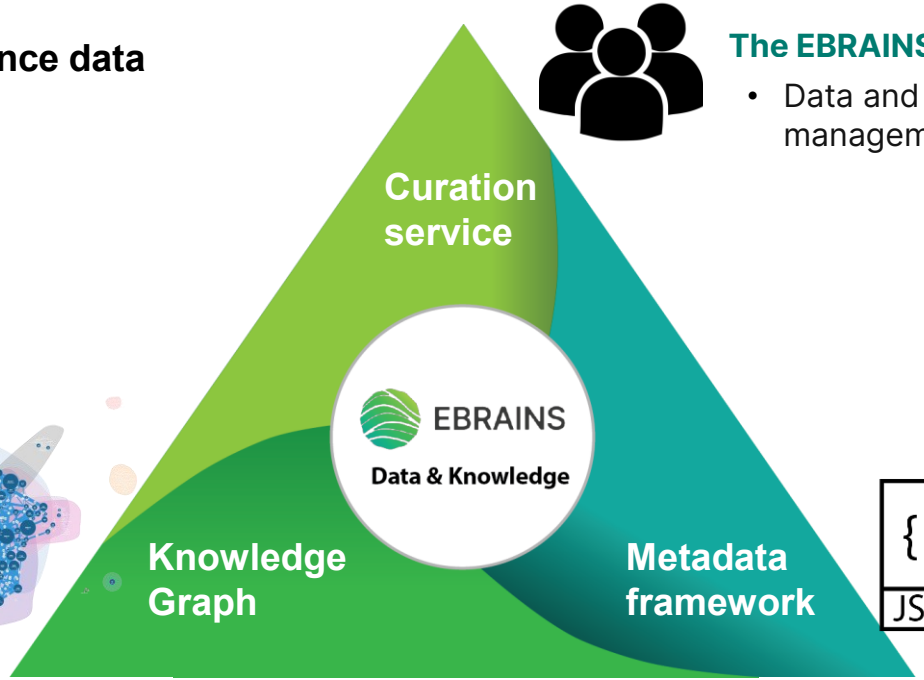
The EBRAINS Data and Knowledge Services

For all of neuroscience data



The EBRAINS Curation team

- Data and metadata management and release

The EBRAINS Knowledge Graph

- Metadata management system

The openMINDS metadata framework

- Standardized metadata annotations

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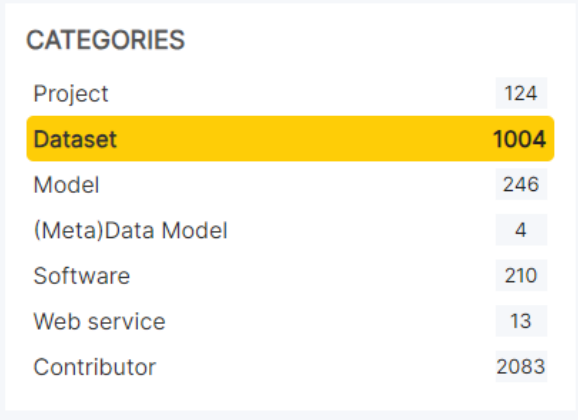
The EBRAINS Knowledge Graph



EBRAINS KG Search, 21.09.23

- >1000 brain-related datasets
- >240 computation models
- >210 related software
- >2080 contributors

- 13 species

- A **repository and registry**: data is available via EBRAINS data storage*, or through external storage
- All research products are reviewed by **curators**

*FENIX Research infrastructure (https://fenix-ri.eu/)

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EBRAINS Datasets

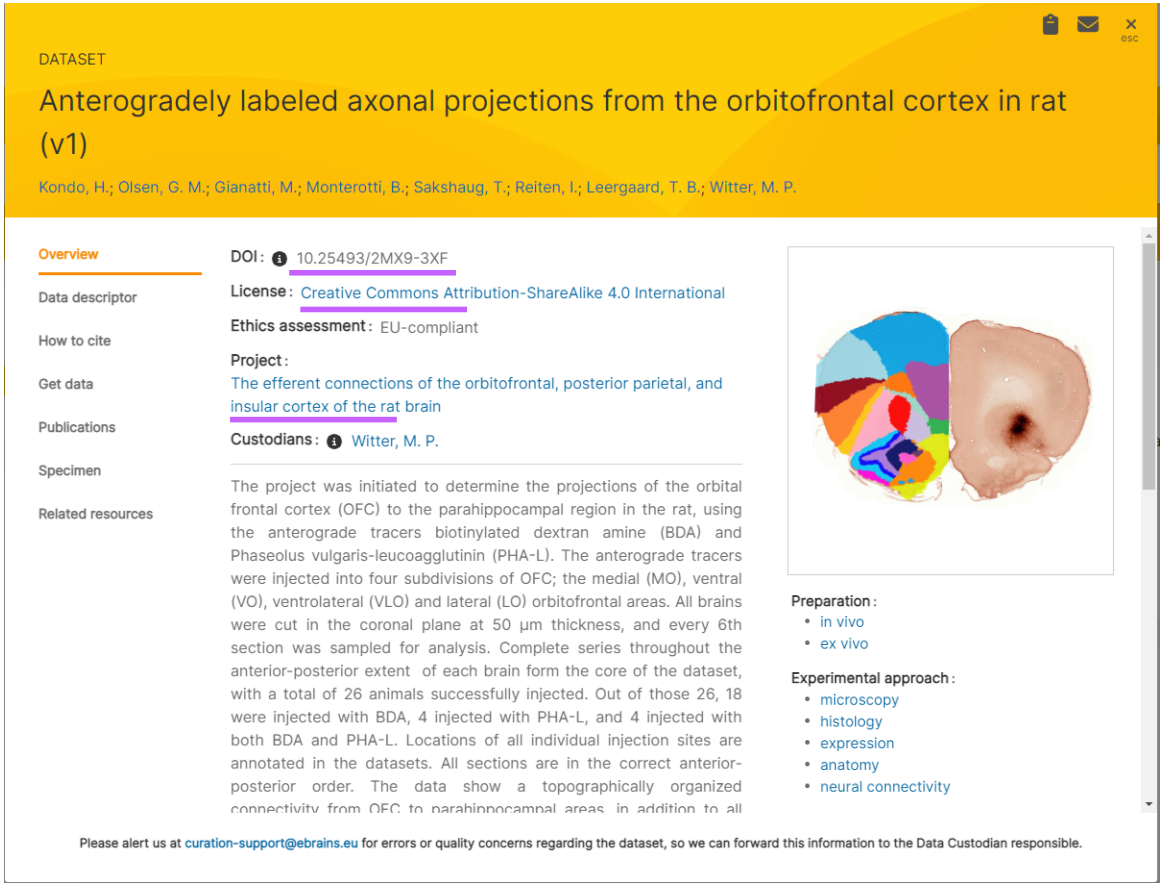
Title & versioning →

Authors →

DataCite DOI →

License →

Project →



← Preview image

← Standardized terms

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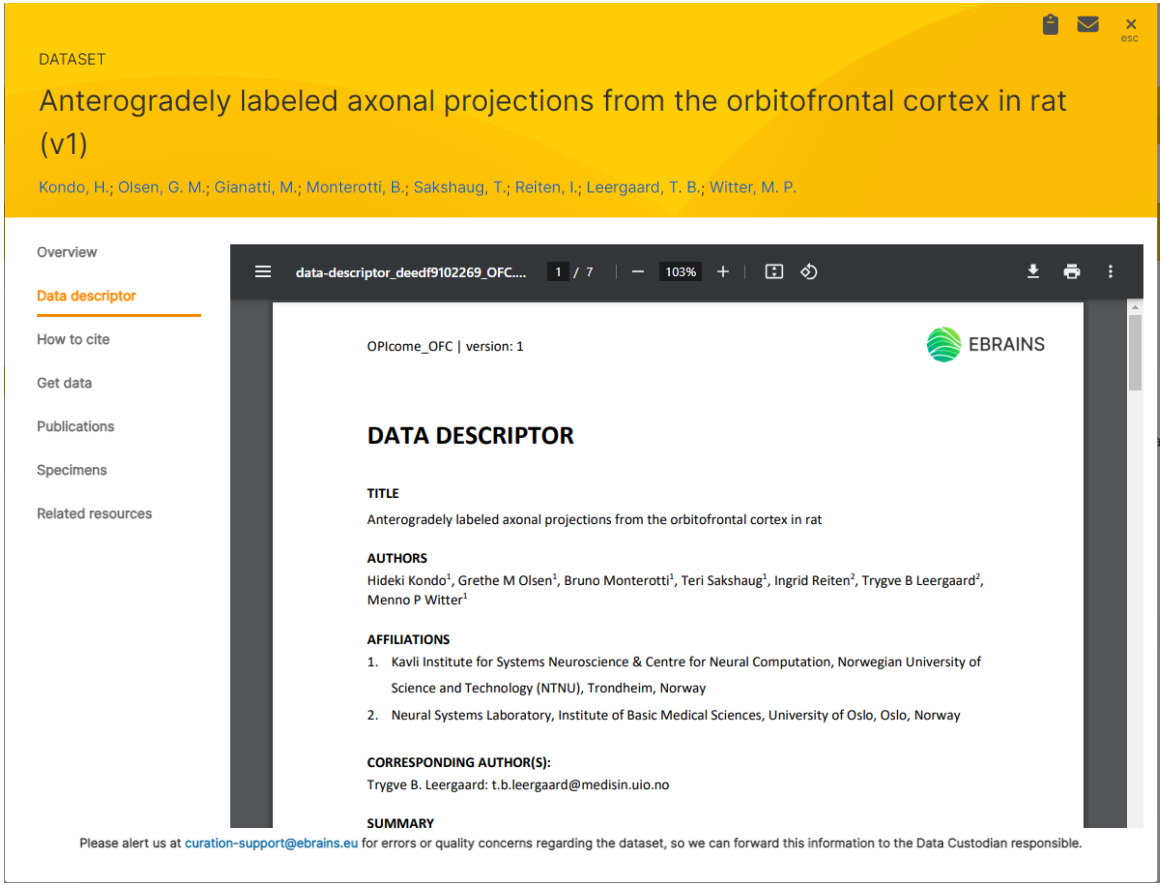
EBRAINS Datasets

Title & versioning →

Authors →



← Data descriptor

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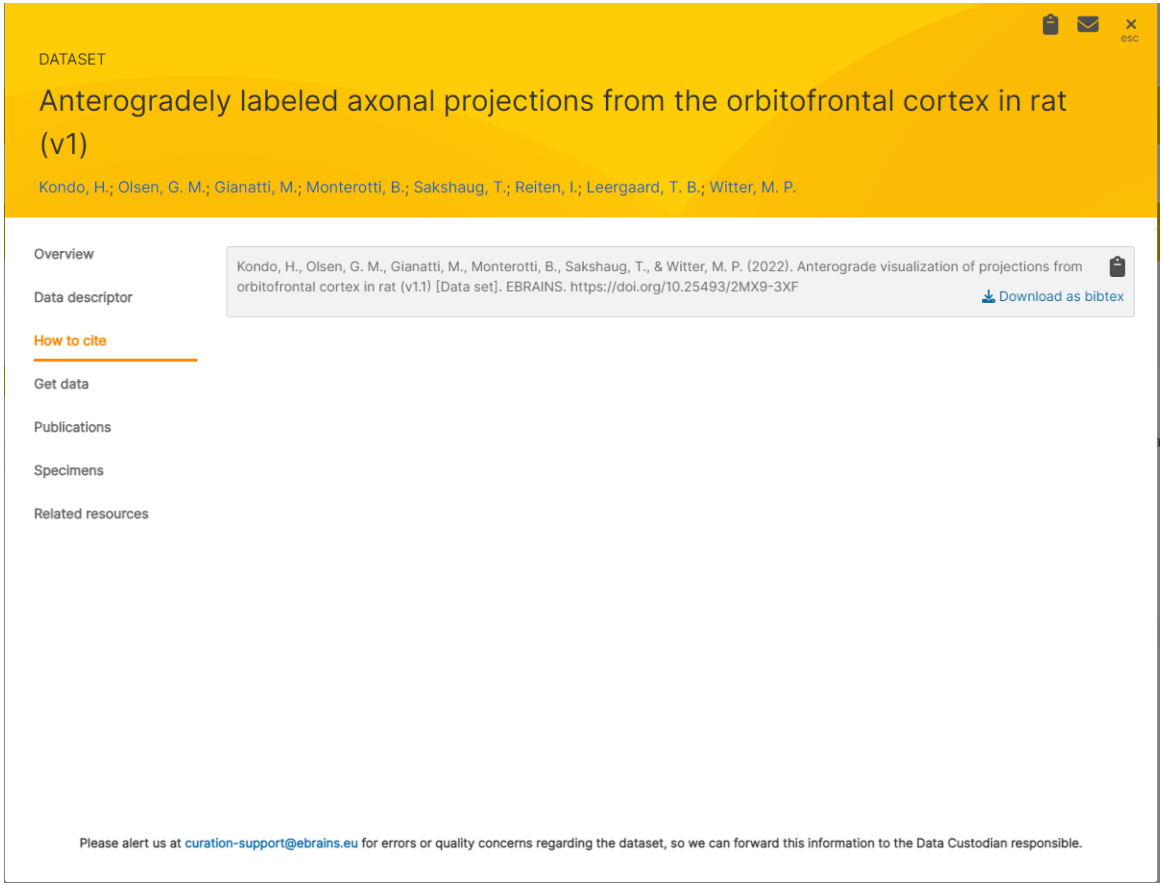

← How to cite

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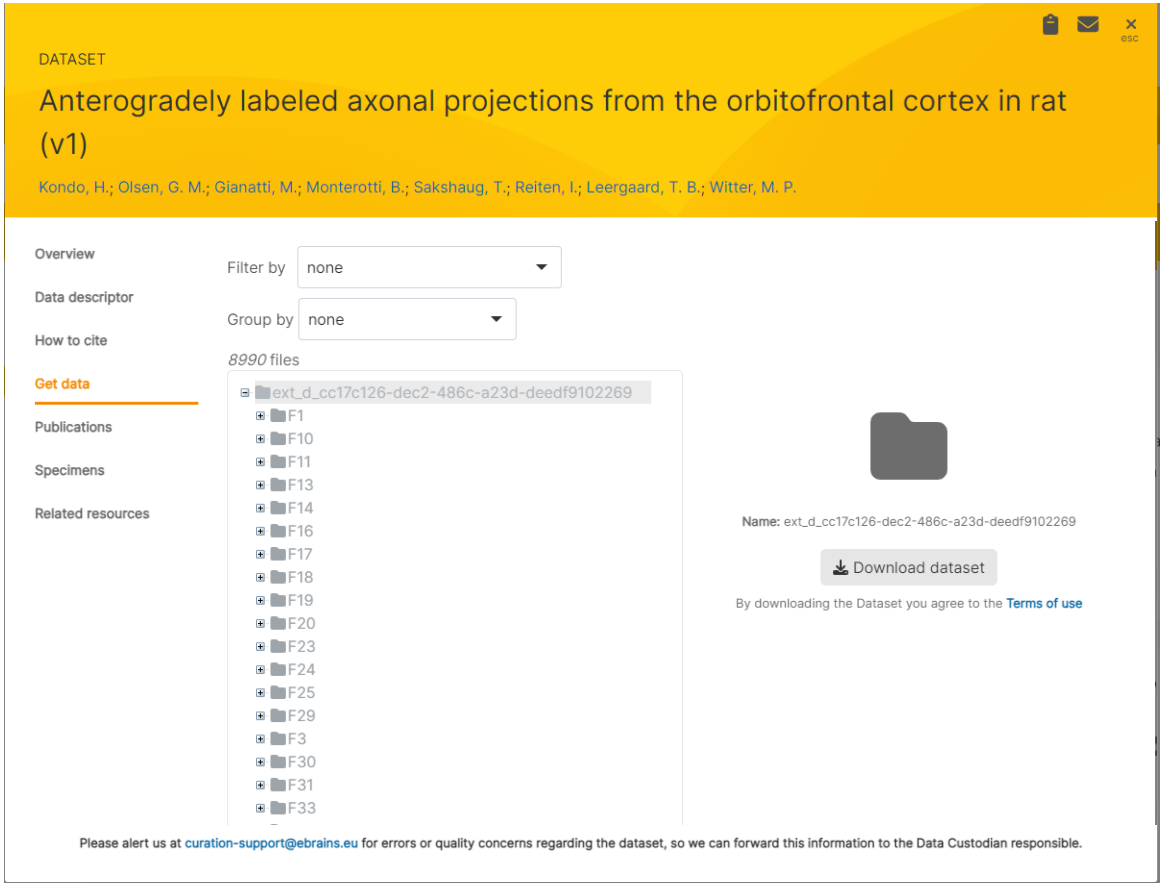

← Download data

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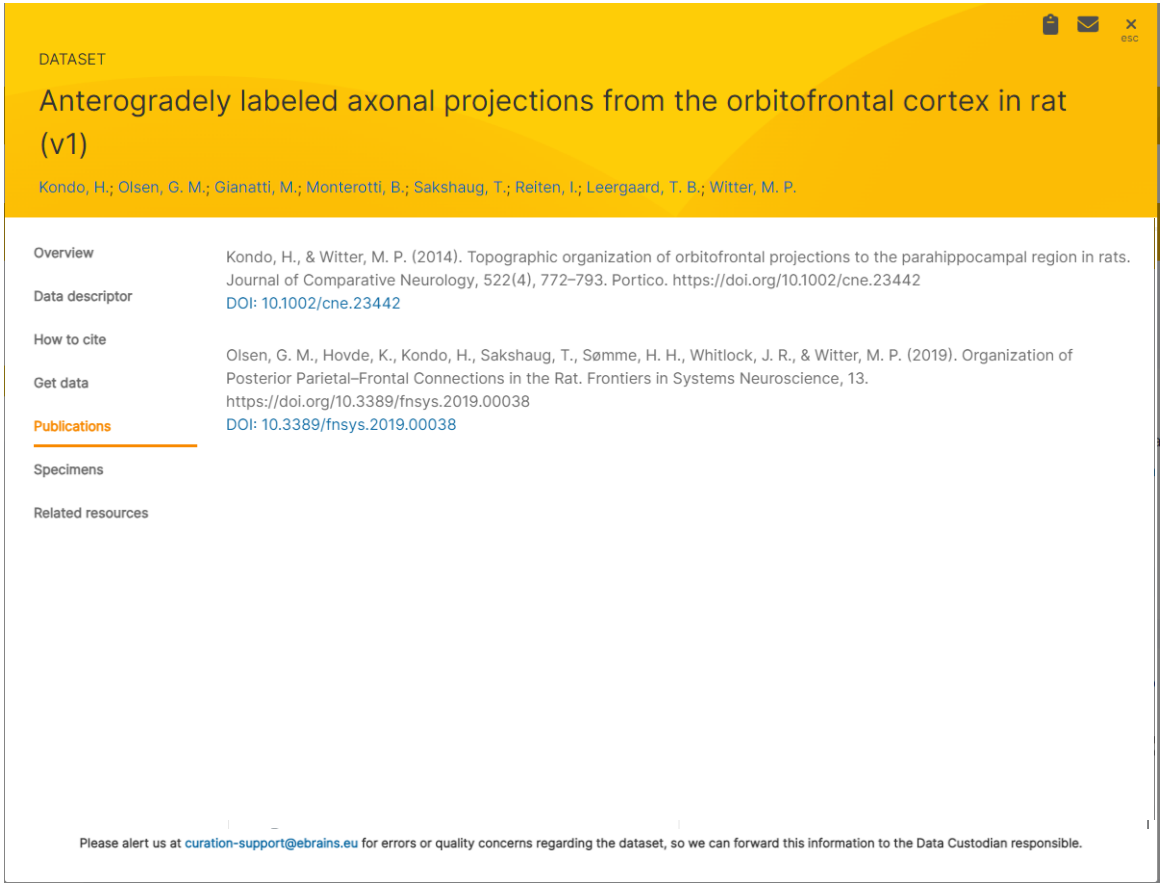

← Related publications

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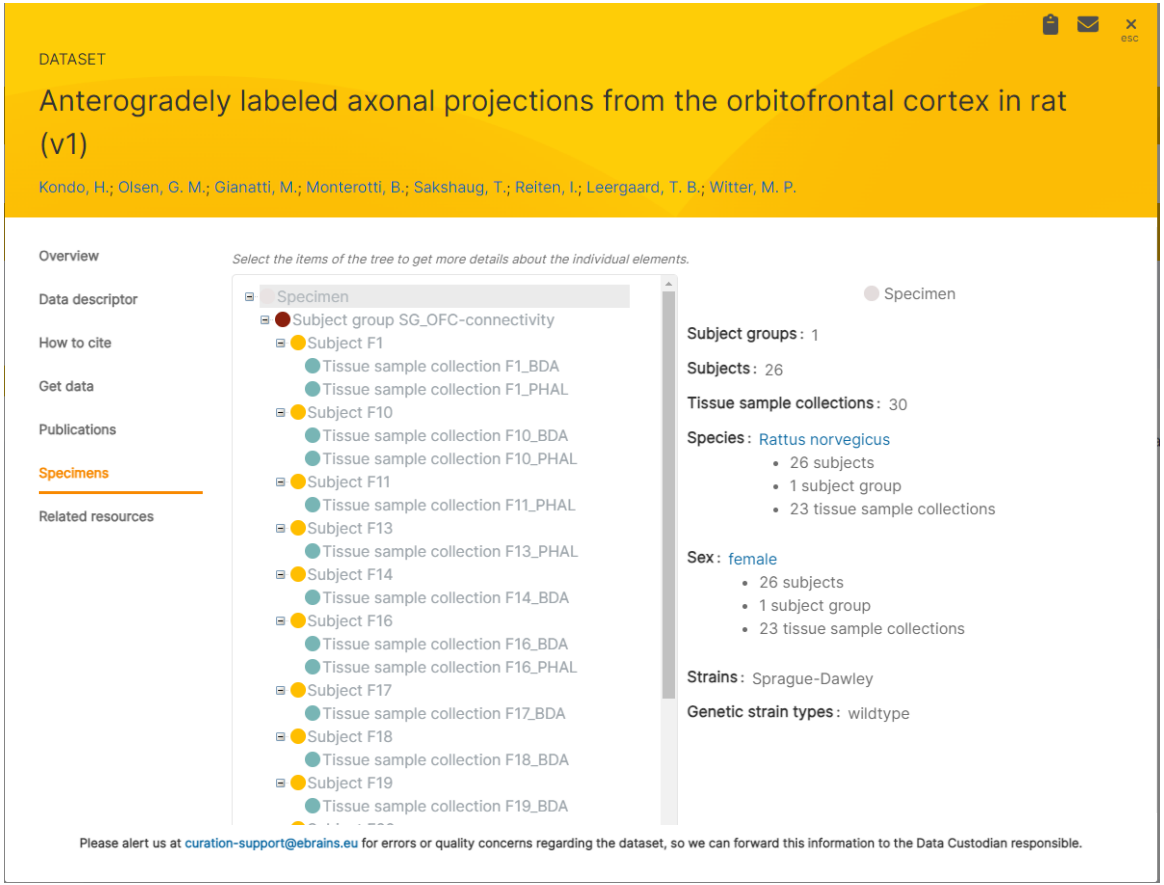

← Specimen metadata

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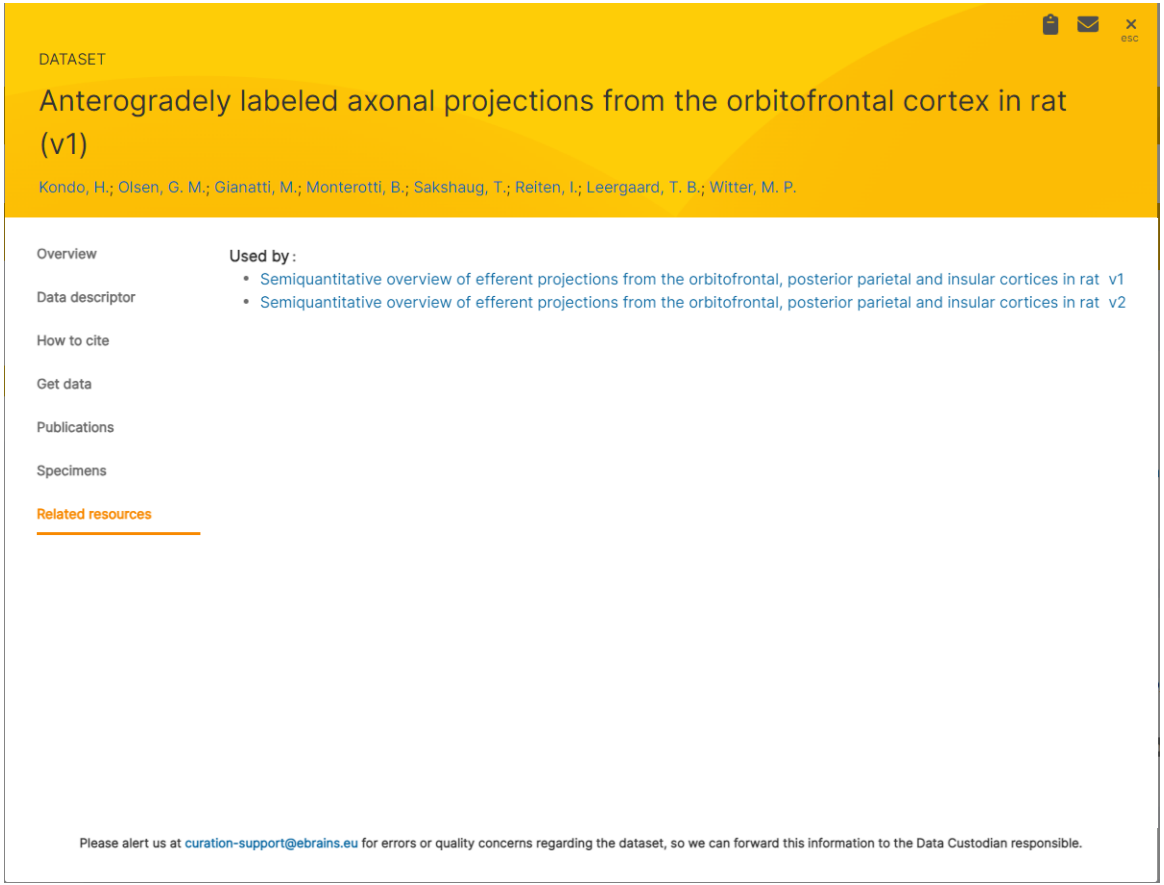

← Derived data

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EBRAINS Datasets

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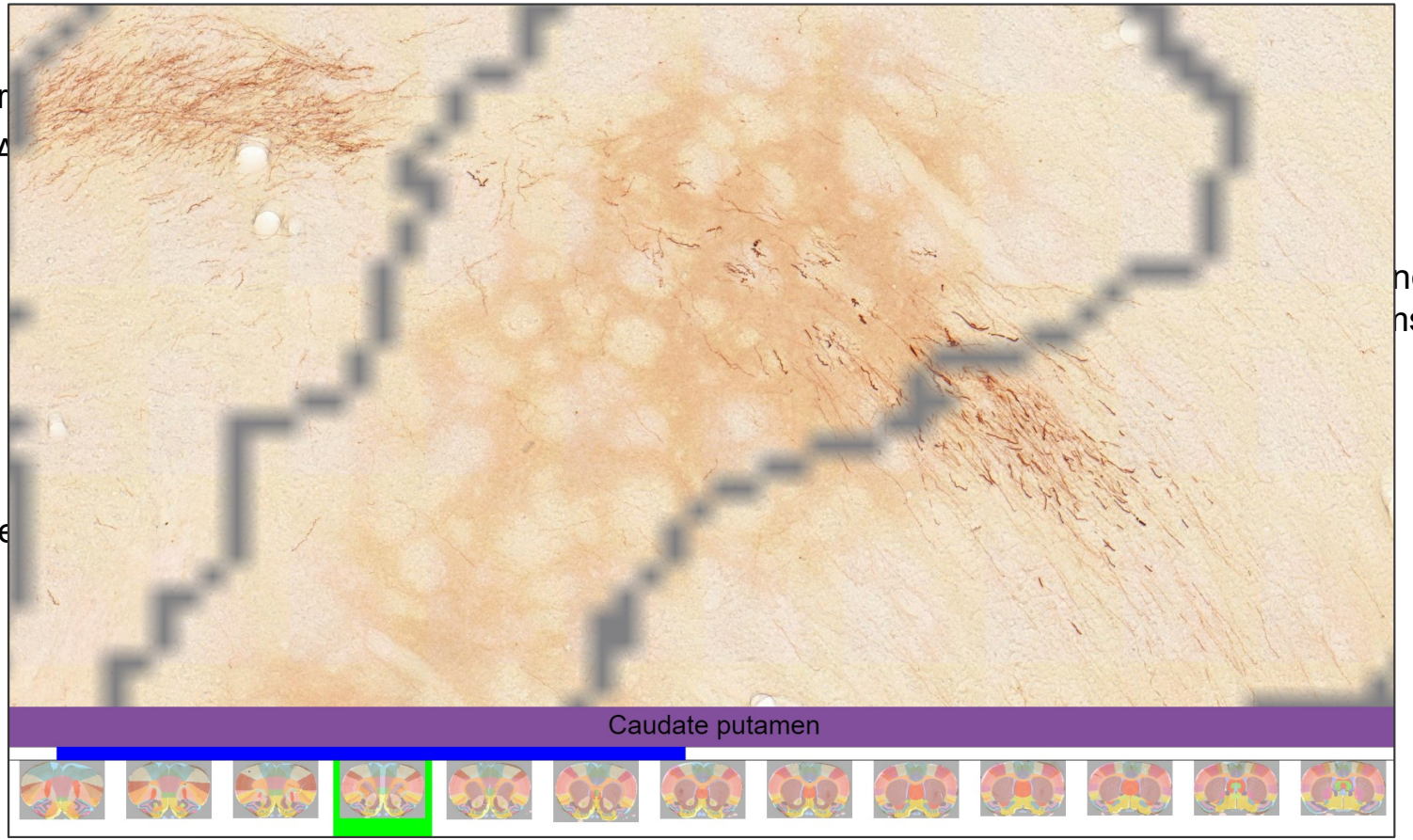

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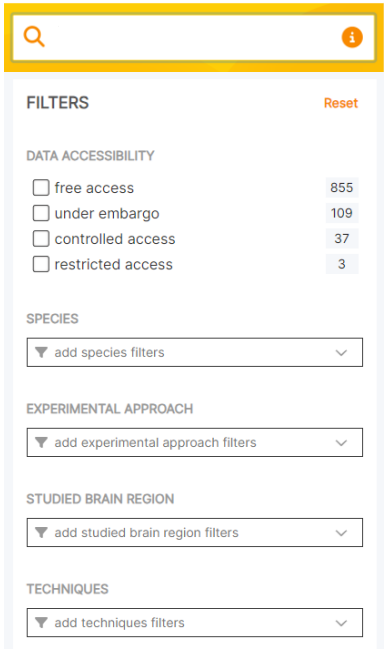
Interacting with the EBRAINS Knowledge Graph

Graphical user interface

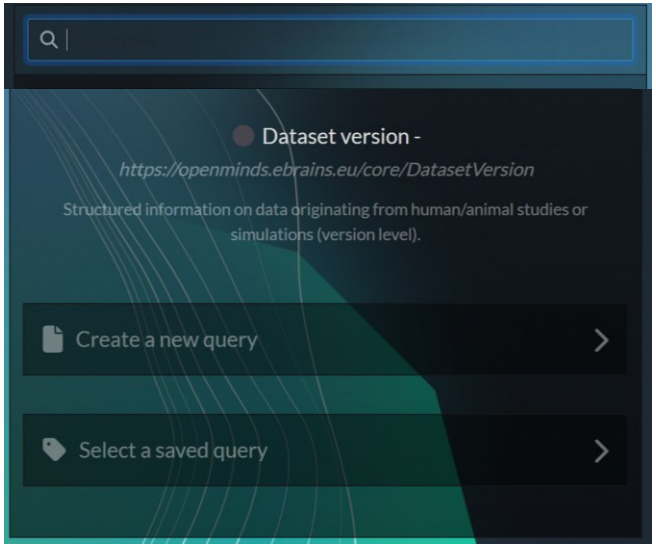
EBRAINS KG Search



search.kg.ebrains.eu/

Graphical user interface

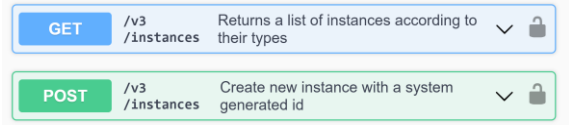
EBRAINS KG QueryBuilder



query.kg.ebrains.eu/

Programmatic interaction

KG API



core.kg.ebrains.eu/swagger-ui/index.html

KG core Python client library

```
pip install ebrains-kg-core
```

openMINDS-KG Python library

```
pip install fairgraph
```

github.com/HumanBrainProject/

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Sharing data via EBRAINS

	Data provider	Curator
	Provide initial information about the dataset (size, ethics, study target, relevance, contributors etc.)	Review initial information (accept/reject)
	Provide data	Review data structure
	Provide metadata	Review metadata
	Provide a data descriptor	Review data descriptor
	Approve dataset release	Compile a dataset in the EBRAINS KG and release

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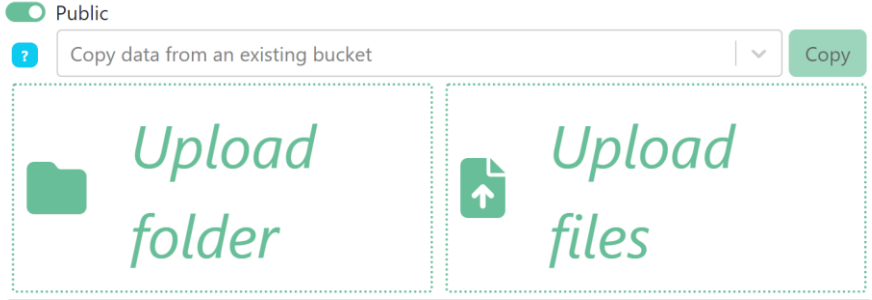
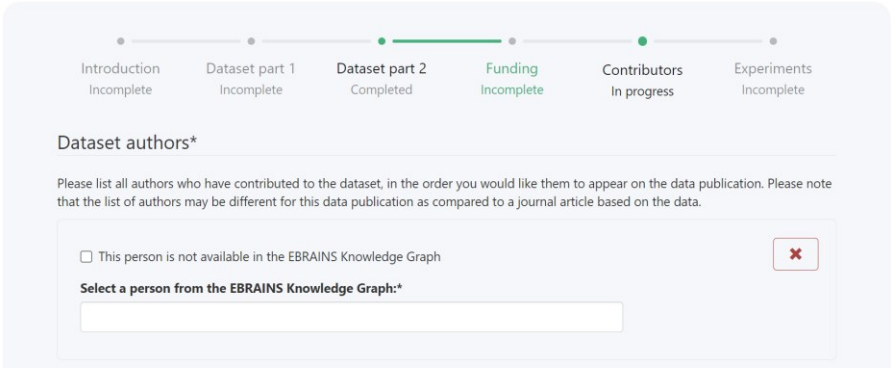
Sharing data via EBRAINS

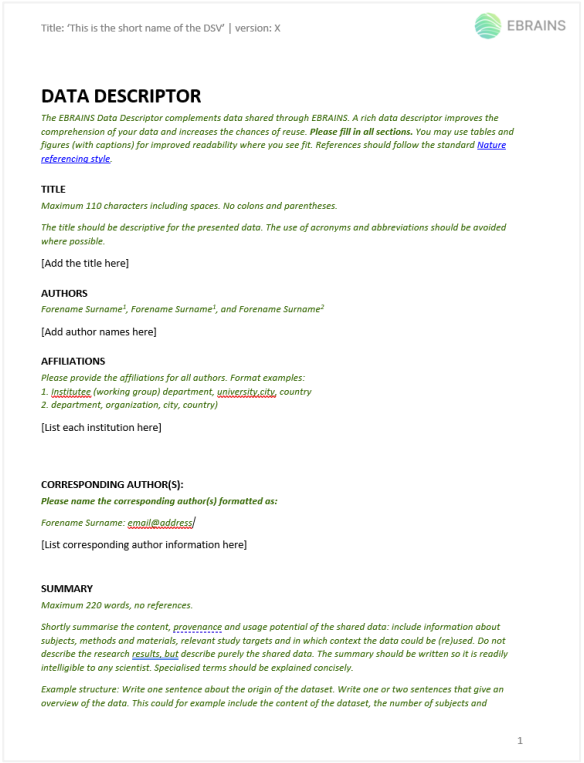
Data upload



Metadata submission



Data descriptor submission



Title: 'This is the short name of the DSV' | version: X

EBRAINS

DATA DESCRIPTOR

The EBRAINS Data Descriptor complements data shared through EBRAINS. A rich data descriptor improves the comprehension of your data and increases the chances of reuse. ***Please fill in all sections.*** *You may use tables and figures (with captions) for improved readability where you see fit. References should follow the standard Nature referencing style.*

TITLE

Maximum 110 characters including spaces. No colons and parentheses.

The title should be descriptive for the presented data. The use of acronyms and abbreviations should be avoided where possible.

[Add the title here]

AUTHORS

Forename Surname[1], Forename Surname[1], and Forename Surname[2]

[Add author names here]

AFFILIATIONS

Please provide the affiliations for all authors. Format examples:
1. Institutee (working group) department, university,city, country
2. department, organization, city, country)

[List each institution here]

CORRESPONDING AUTHOR(S):

Please name the corresponding author(s) formatted as:

Forename Surname: email@address

[List corresponding author information here]

SUMMARY

Maximum 220 words, no references.

Shortly summarise the content, provenance and usage potential of the shared data: include information about subjects, methods and materials, relevant study targets and in which context the data could be (re)used. Do not describe the research results, but describe purely the shared data. The summary should be written so it is readily intelligible to any scientist. Specialised terms should be explained concisely.

Example structure: Write one sentence about the origin of the dataset. Write one or two sentences that give an overview of the data. This could for example include the content of the dataset, the number of subjects and

1

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EBRAINS as SciLake pilot

Mission:

Create a scientific data lake by interlinking Knowledge Graphs and raw scholarly content across scientific domains

- EBRAINS will implement and test SciLake developments and demonstrate the utility of the project
  - EBRAINS is an operative Knowledge Graph for the neuroscience domain
  - Guide SciLake in making their services relevant for the neuroscience community.

- Neuroscience data repositories could benefit from interlinking with publication-oriented resources

openAIRE graph

EBRAINS Knowledge Graph

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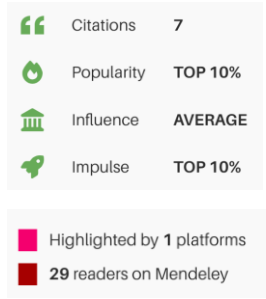
EBRAINS leveraging from SciLake developments

- Integration of SciLake's text mining tools to facilitate EBRAINS metadata submission and review

- Integration of SciLake's impact and usage indicators to deliver citation metrics for EBRAINS datasets



Citation metrics

Attention score

Amplifying valuable research

- Integration with the AvantGraph analytics engine to achieve additional query functionalities and interoperability with the openAIRE graph

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Acknowledgements

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