

Quantified Data by Structures

QUANTIFIED DATA BY STRUCTURES



Data from our large scale gene expression and connectivity products is processed through an informatics data analysis pipeline to obtain spatially mapped quantified expression/projection information.

Quantified data is available for the following atlases:



Mouse Brain



Developing Mouse Brain



Mouse Connectivity

The output of the pipeline are quantified values at a [grid voxel level](#). Quantified values can be computed for each structure delineated in the associated reference atlas by combining or unionizing grid voxels with the same 3-D structural label. While the reference atlas is typically annotated at the lowest level of the ontology tree, statistics at upper level structures can be obtained by combining measurements of the hierarchical children to obtain statistics for the parent structure.

Expression statistics are encapsulated as a `StructureUnionize` object associated with one `Structure` and one `SectionDataSet`.

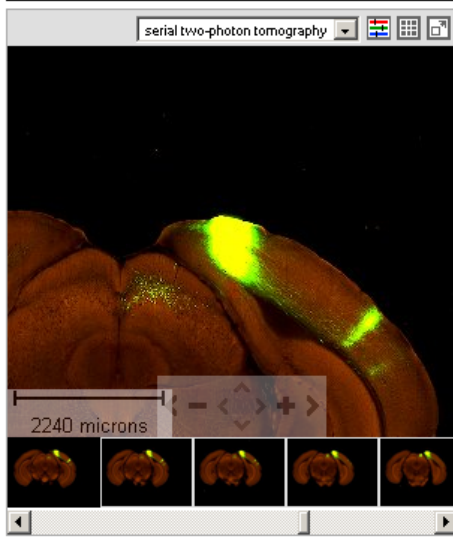
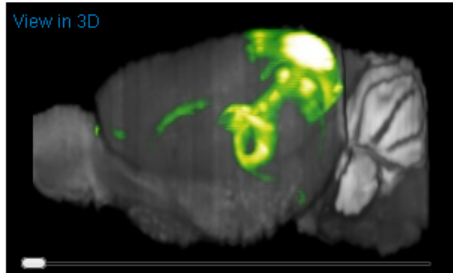
Projection statistics are encapsulated as a `ProjectionStructureUnionize` object associated with one `Structure`, either left, right or both Hemispheres and one `SectionDataSet`.

`StructureUnionize` and `ProjectionStructureUnionize` data can be downloaded via RMA and are used in the web application to display expression summary bar graphs for a set of coarse structures. Its usage is also demonstrated in the "[structure networks](#)" example application.

Refer to the atlas API pages for further details.

| Manual Injection Summary | |
|--------------------------|------------------------------------|
| Primary Structure | Primary visual area |
| Secondary Structures | |
| Coords. (AP,DV,ML,Z) | Bregma(-4.48, 0.31, 1.6, 0) |
| Mouse Strain | C57BL/6J |

| Quantified Injection Summary | |
|------------------------------|-------|
| VISp | VISpm |



Projection Volume 0.0050 / 2.6399 mm³

search for structures

| Structure | Left Hemisphere | Right Hemisphere |
|-------------|-----------------|------------------|
| - grey | 0.0687 | 2.2698 |
| - Isocortex | 0.0554 | 1.4925 |
| + MOp | 0.0002 | 0.0093 |
| + MOs | 0.0003 | 0.0061 |
| + SSp-bfd | 0.0004 | 0.0079 |
| + SSp-tr | 0.0002 | 0.0294 |
| + SSp-un | 0.0001 | 0.0099 |
| + AUDd | 0.0003 | 0.0189 |
| + AUDp | 0.0001 | 0.0067 |
| + VISal | 0.0004 | 0.0806 |
| + VISam | 0.0136 | 0.2805 |
| + VISl | 0.0006 | 0.0422 |
| + VISp | 0.0152 | 0.3721 |
| + VISpl | 0.0010 | 0.0205 |
| + VISpm | 0.0054 | 0.1296 |
| + ORBvl | 0.0005 | 0.0080 |
| + RSPagl | 0.0069 | 0.0759 |
| + RSPd | 0.0039 | 0.0783 |
| + RSPv | 0.0018 | 0.0299 |
| + PTLp | 0.0011 | 0.1876 |
| + TEa | 0.0006 | 0.0505 |
| + ECT | 0.0007 | 0.0275 |
| - HPF | 0.0074 | 0.1273 |
| + DG | 0.0021 | 0.0189 |
| + ENTI | 0.0002 | 0.0114 |
| + ENTm | 0.0004 | 0.0054 |
| + POST | 0.0028 | 0.0410 |
| + PRE | 0.0013 | 0.0224 |
| + SUBd | 0.0002 | 0.0127 |
| - STR | 0.0009 | 0.0850 |
| - CP | 0.0001 | 0.0832 |
| - PAL | 0.0008 | 0.0145 |
| - GPe | 0.0000 | 0.0135 |
| - TH | 0.0003 | 0.2940 |
| - LGd | 0.0000 | 0.0522 |
| - LP | 0.0000 | 0.0459 |
| - PO | 0.0000 | 0.0051 |
| - LD | 0.0000 | 0.0725 |
| - PT | 0.0000 | 0.0251 |

Figure: Bar plot of projection values by structure for an injection into the primary visual area.