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QuickNII Brain Atlas Registration V.2

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We use this protocol and it's working

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Abstract

This protocol describes QuickNII brain atlas registration.

Attachments

PDF

812-2118.pdf

4.6MB

QuickNII Brain Atlas Registration

1 Open the **QuickNII** program folder.

2 Open **Filebuilder**. (FileBuilder loads your registration images by default settings without automated aligment, Skip to step 6 if using **DeepSlice**).

3 Navigate to the **QVN** folder with the brain image exports from QuPath.

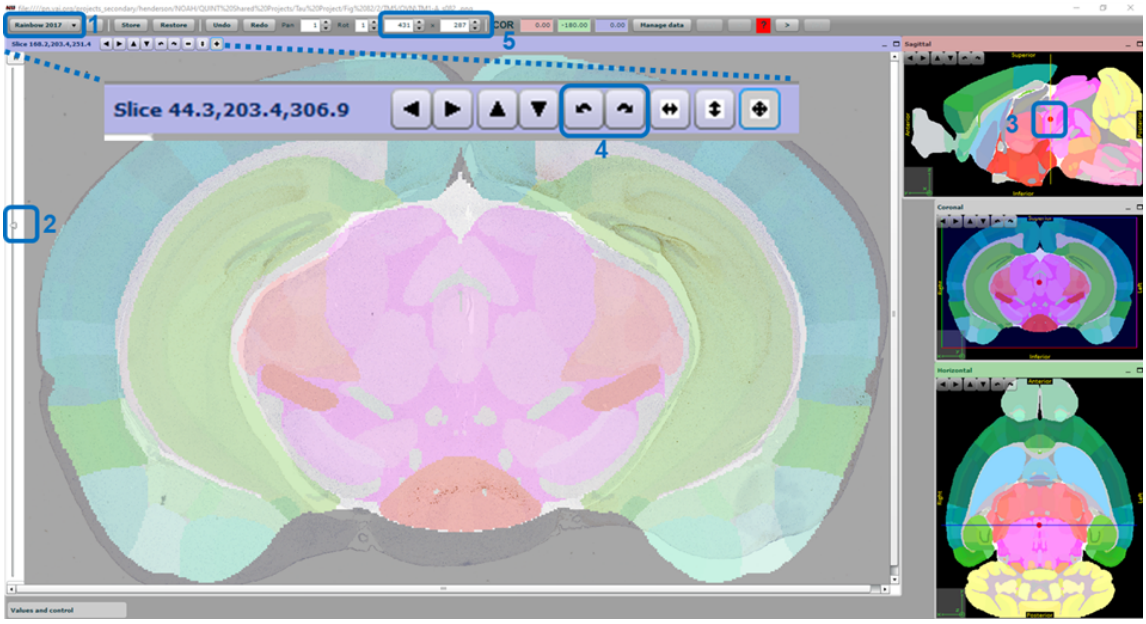
4 Click all images to be registered, and click “Open”.

> **Note**
>
> *It is useful to add a shortcut of the QVN folder to your desktop for simpler navigation*

5 Press “SAVE XML”. Navigate to the **QVN** folder and save as "Filebuilder XML". Close FileBuilder.

6 Open the application **QuickNII**. Press “Manage Data” > “Load” and load the XML file that was just generated in step 5. (**DeepSlice**: load results.XML from QVN folder).

7 Double click on the first image, and it will show up on the Atlas in QuickNII.



8 Open Rainbow 2017 atlas in upper left hand corner (1).

9 You can see the overlay better by dragging the transparency bar (2)

10 For **first** section, find anteroposterior position. To do this, drag the sagittal red dot (3) to the correct rostro-caudal position. Click "**Store**" to save the position.

11 Repeat for the **last** section. This will bring all other sections to the approximately correct position.

12 Adjust each individual section to the appropriate place in the atlas by adjusting. These may need to be done iteratively until the correct plane of section is identified.

> Note
>
> Alignment will not be perfect, only the plane of section, but the better job you do here, the easier Visualign transformations will be.

a. **Rotation**: clockwise or counter-clockwise (4).
b. **Brain Size**: in the x and y direction (5).
c. **Rostro-caudal position**: sagittal view.

d. **Left-Right plane**: Pull Horizontal view bar.
e. **Front-back plane**: Pull Sagittal view bar.

Note

All of the Atlas needs to remain in the view or it will be lost for analysis.

13 Click “**Store**” before moving off section or it will not save!

14 Navigate to next section by double clicking on it in the Manage Data window, or by clicking the < and > arrows in the upper right. Edit all sections as noted in **step 12**.

15 Click “Manage Data”.

16 Click “Export Propagation” and save this XML file as “**QuickN XML.xml**" within the **QVN** folder.

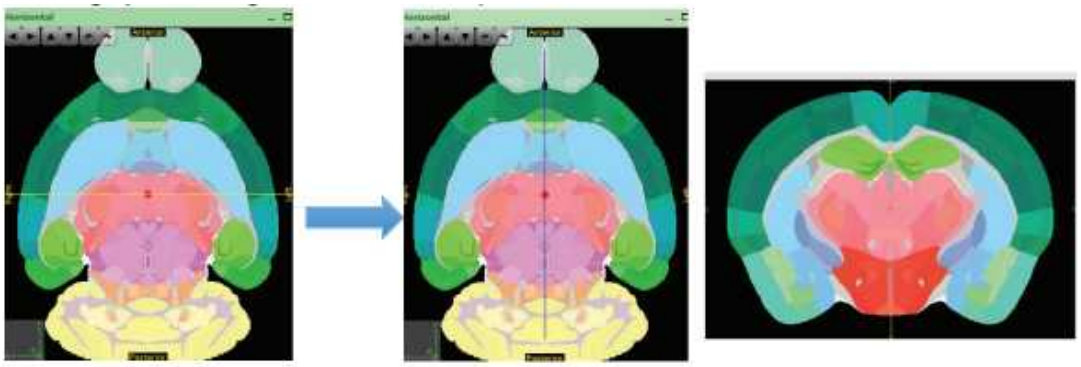
Note

- Is not automatically recognized as a .xml file, hence the need to add “.xml” to the end of the name.
- Click “Export Slices” if you want atlas images, but this is not necessary for the workflow and will clutter your folder.

17 Click “Save JSON” and label it “**QuickN JSON**”. This JSON file is used for **Visualign**.

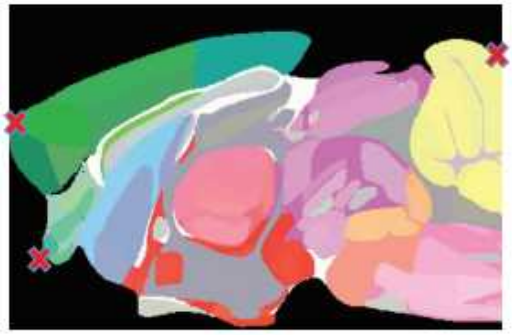
18 For QMask, go back to the **first** section.

19 Adjust the horizontal plane (Right) in the atlas to match hemispheric split. Ensure proper bisecting by confirming with in the coronal plane.



20 Open **QMask Coordinates** Excel File.

21 Hover the cursor over the brain viewing window and record x-y-z coordinates (shown in the top left of the window) for three parts of the brain: Top-Left, Top-Right, Bottom-Left. Record coordinates in the **QMask Coordinates** file.



Project	Figure	Repeat	Block	Location	x	y	z
Tau MLI-2	82	1	TM5	Top-left	227.5	414.2	223.3
Tau MLI-2	82	1	TM5	Top-right	226	-0.4	223.7
Tau MLI-2	82	1	TM5	Bottom-left	226.7	400	77