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Version 1

QuickNII Brain Atlas Registration V.1

 In 1 collection

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Protocol status: Working

We use this protocol and it's working

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Abstract

This protocol describes QuickNII brain atlas registration.

Attachments



[812-2118.pdf](#)

4.6MB

QuickNII Brain Atlas Registration

- 1 Open the **QuickNII** program folder.
- 2 Open **Filebuilder**.
- 3 Navigate to the **QVN** folder with the brain image exports from QuPath.
- 4 Click all images to be registered, and click "Open". *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 11.
- 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.

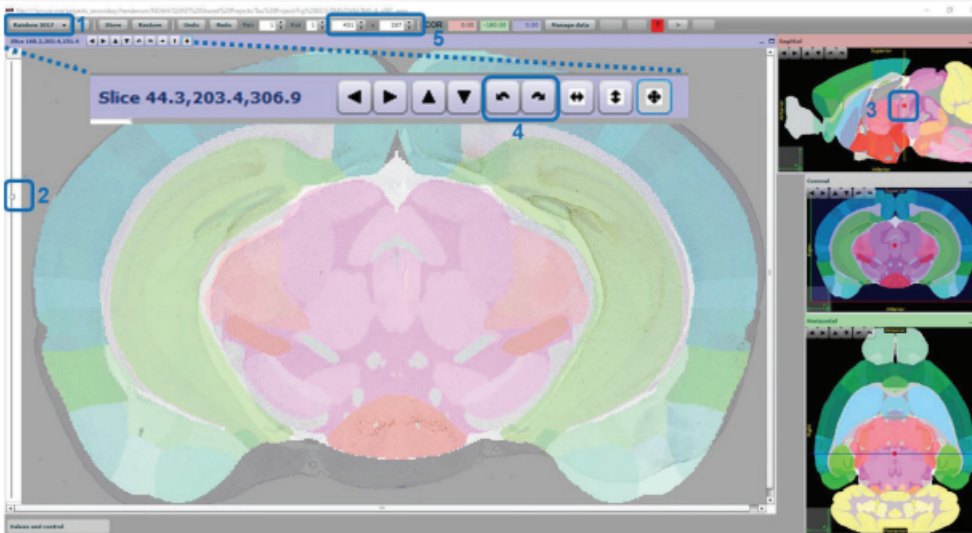
Note

*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

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



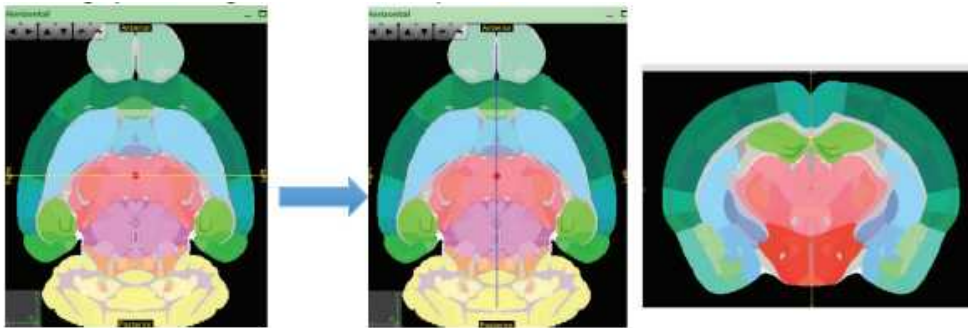
- 13 Click "**Store**" before moving off section or it will not save!
- 14 Navigate to next section by double clicking on it in the Manage Data window, or by clicking the arrows in the upper right. Edit all sections as noted in **step 12**.
- 15 Click "Manage Data".
- 16 Click "Export Propagation" and save this XML file as "**QuickN XML.xml**" within the **QVN** folder. *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 **Visualalign**.

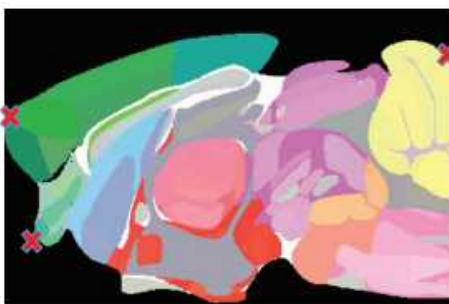
18 For QMask, go back to the **first** section.

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