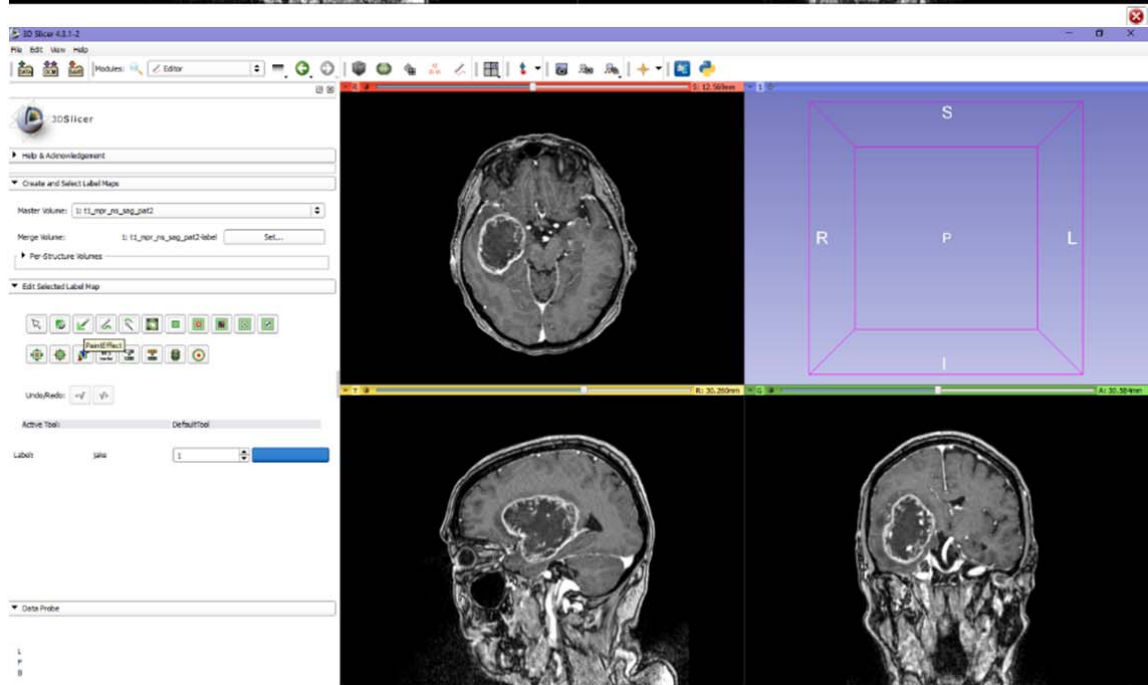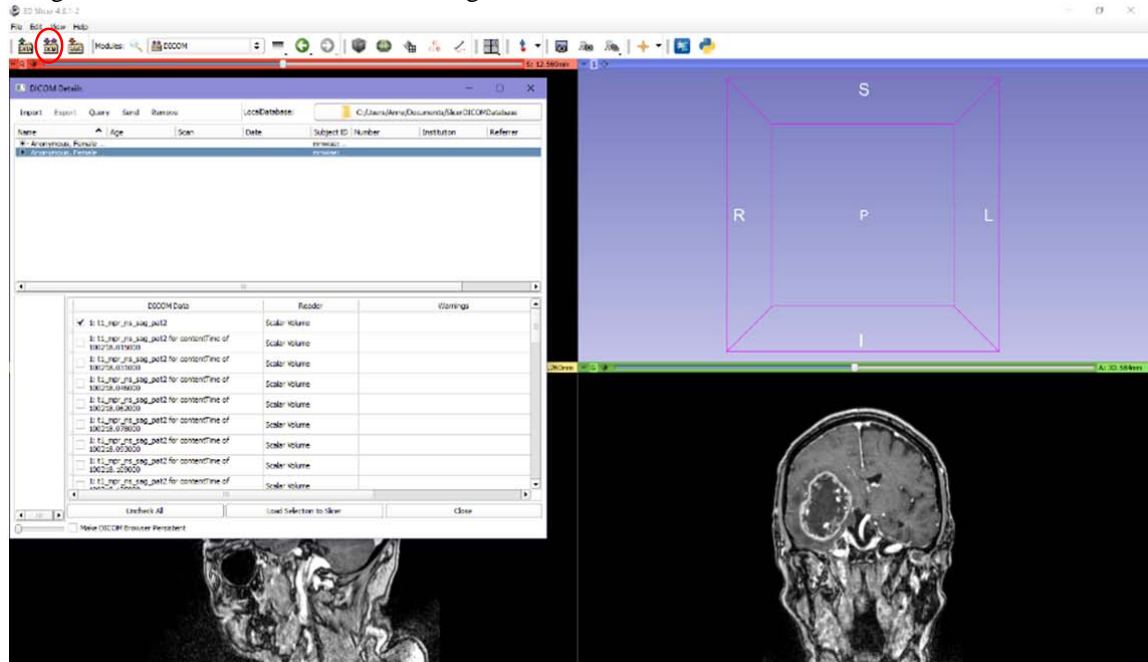# S1 APPENDIX COMPREHENSIVE SEGMENTATION WORKFLOWS

## SEGMENTATION WORKFLOW IN 3D SLICER

In 3D Slicer, a competitive region-based segmentation module called "GrowCut", located in the editor module, was used.
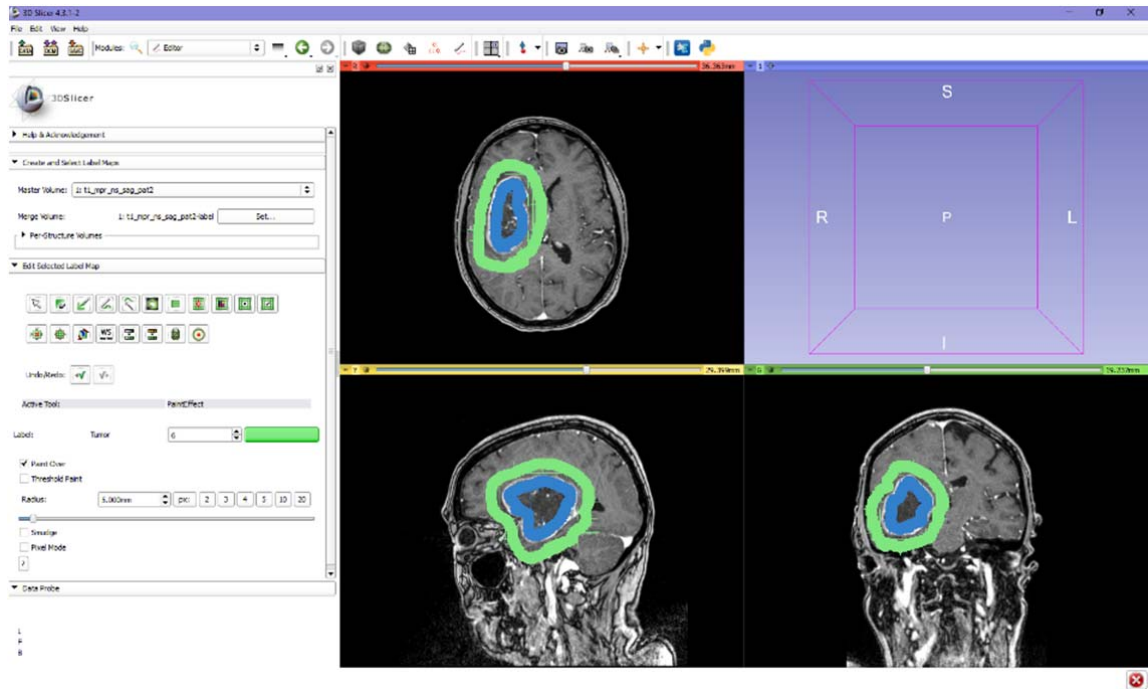
1. Images were loaded in dicom format using the dicom browser.



2. Using the "paint-effect" in the editor module (delineated in red), very rough outlines of the tumor were drawn in several planes in each directions using one label color.
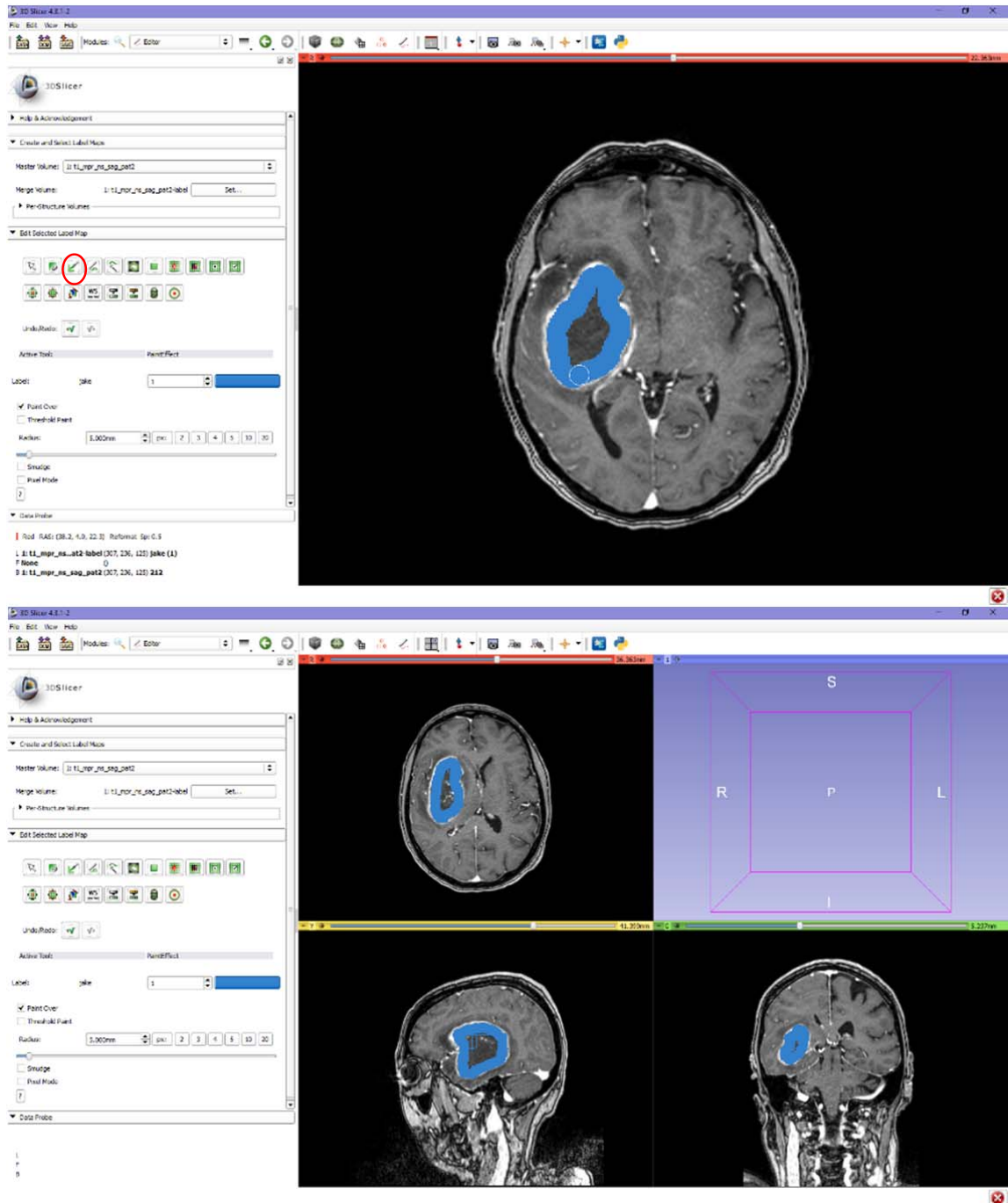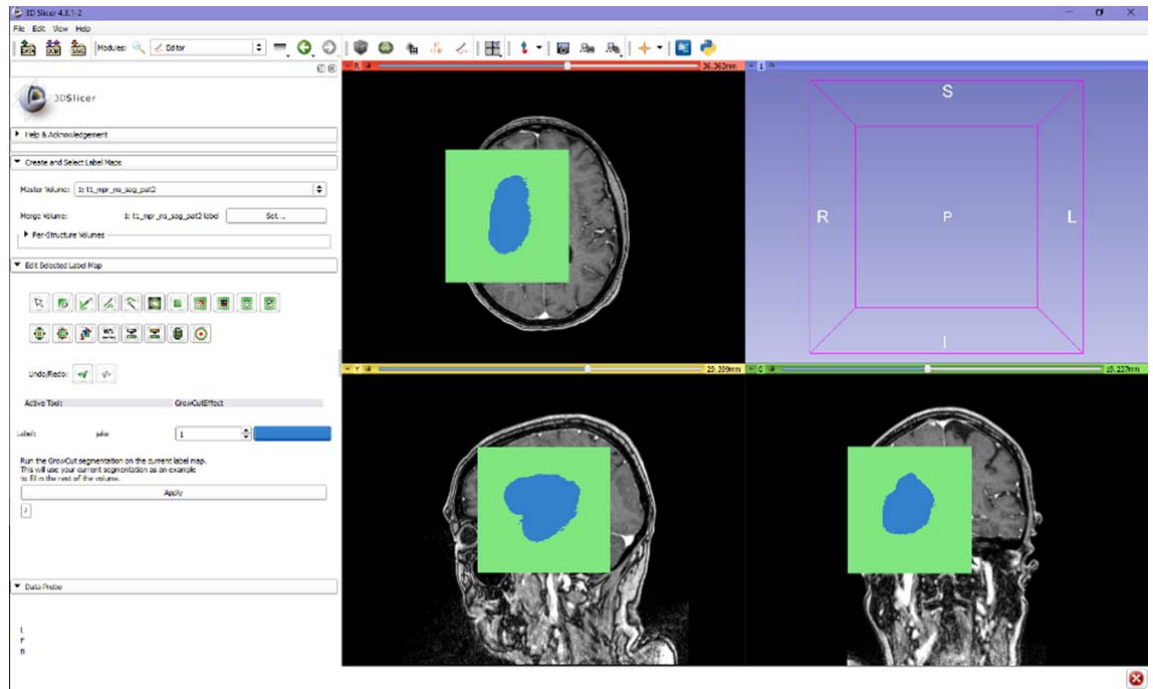
3. Then, a second label color was used to draw the outer borders of the tumor, to define "not-tumor" to the algorithm.
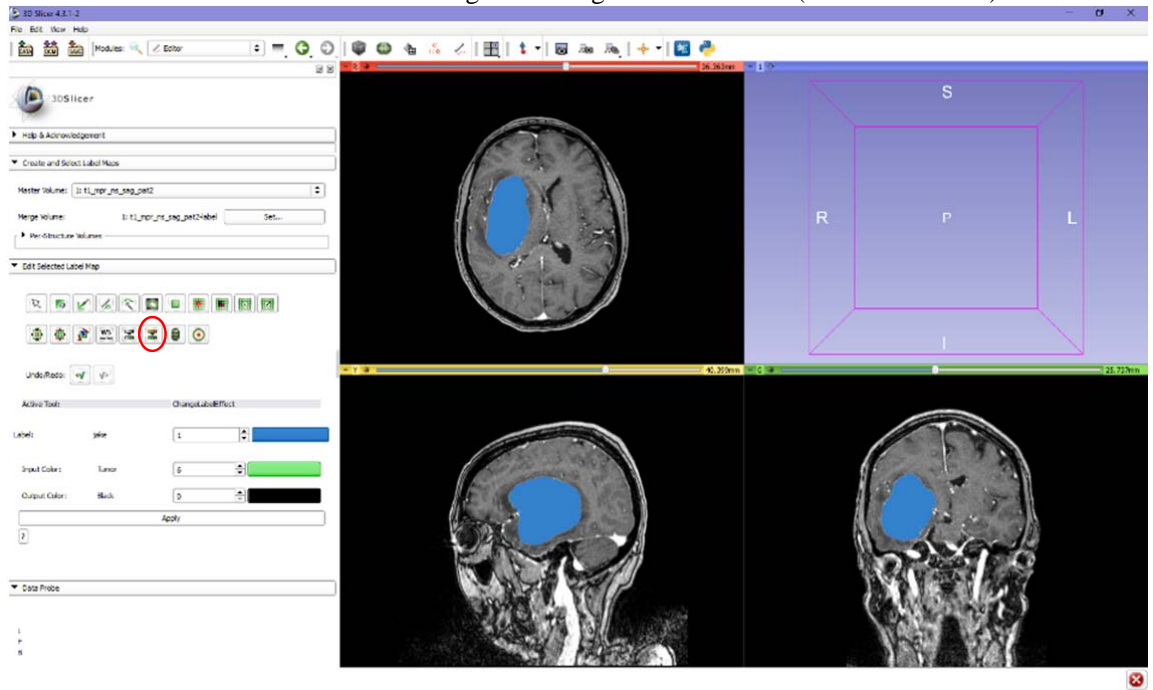
4. Using the tumor label color as the input, the grow cut algorithm (delineated in red) was run. This produces a complete, but rough segmentation label of the tumor.
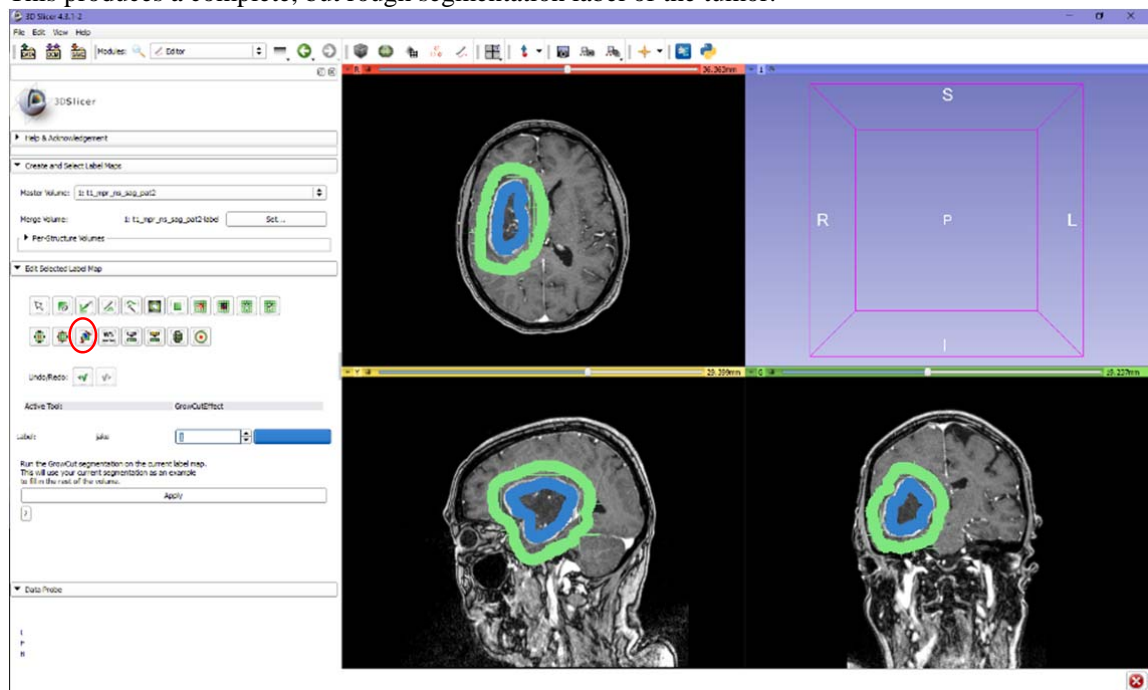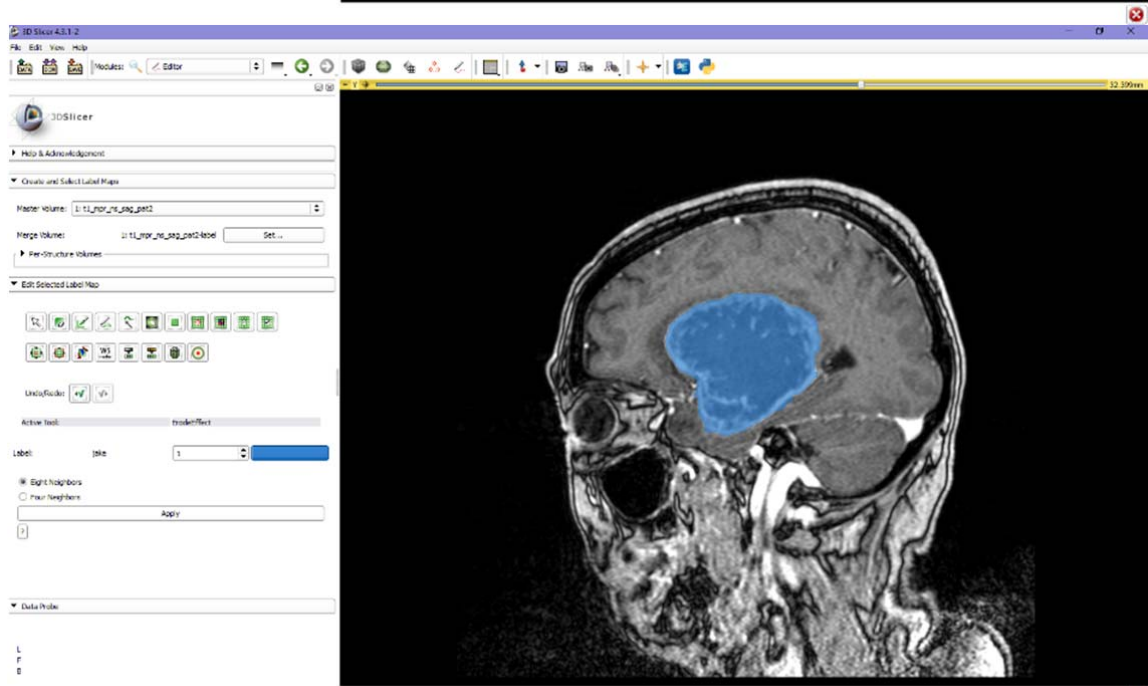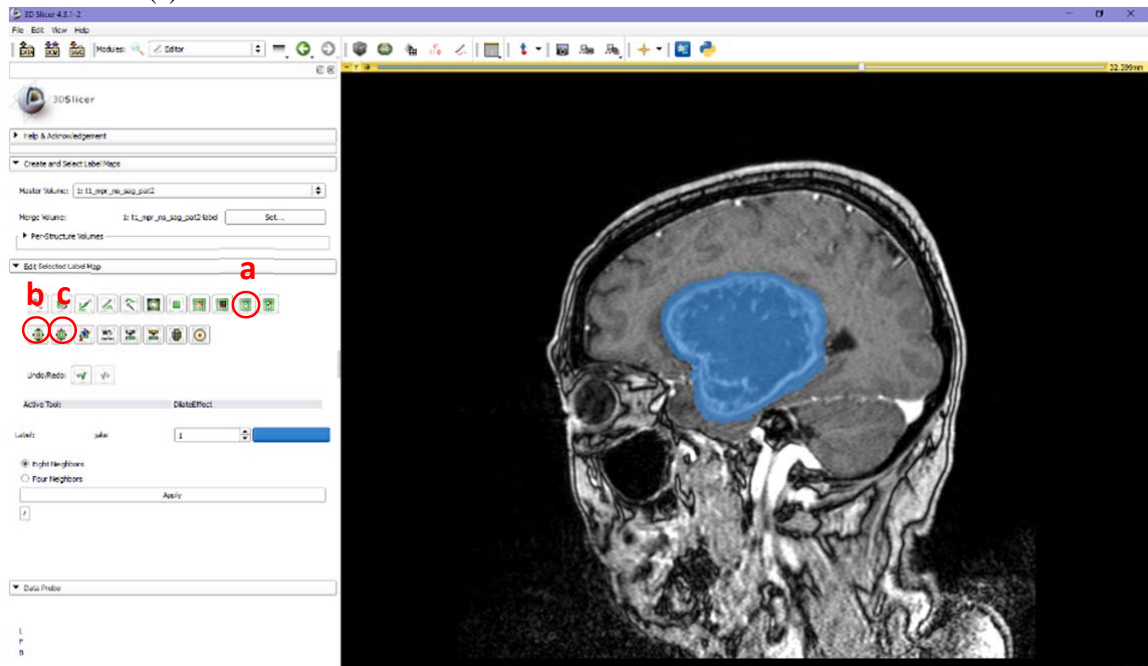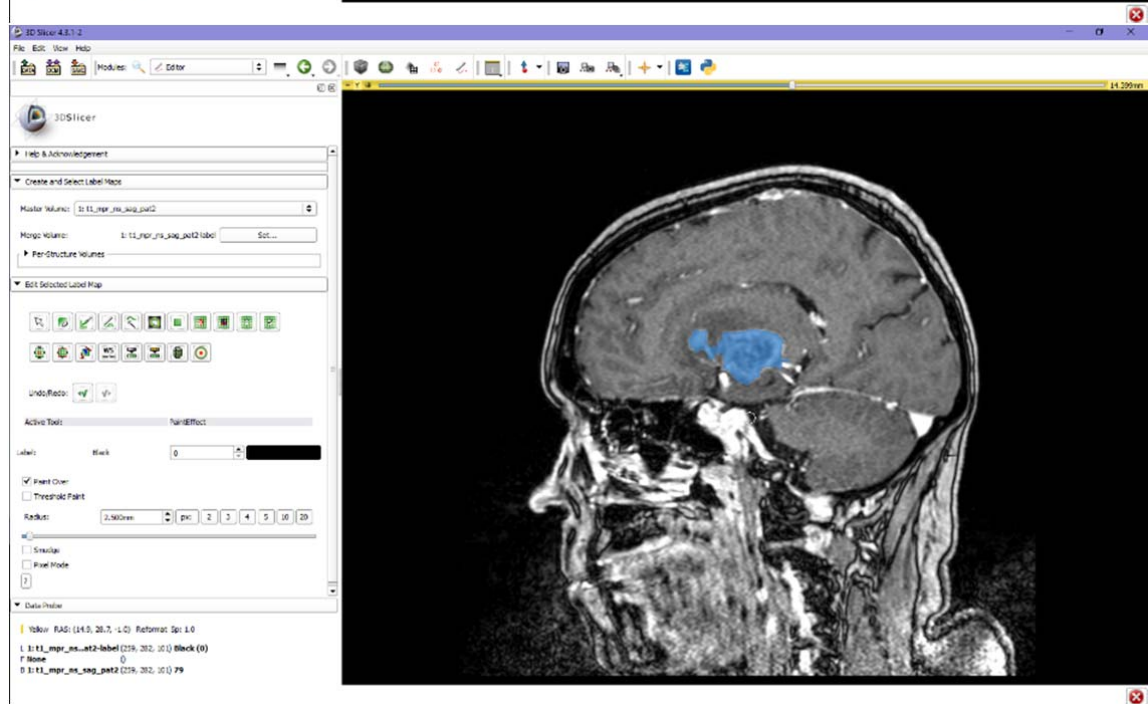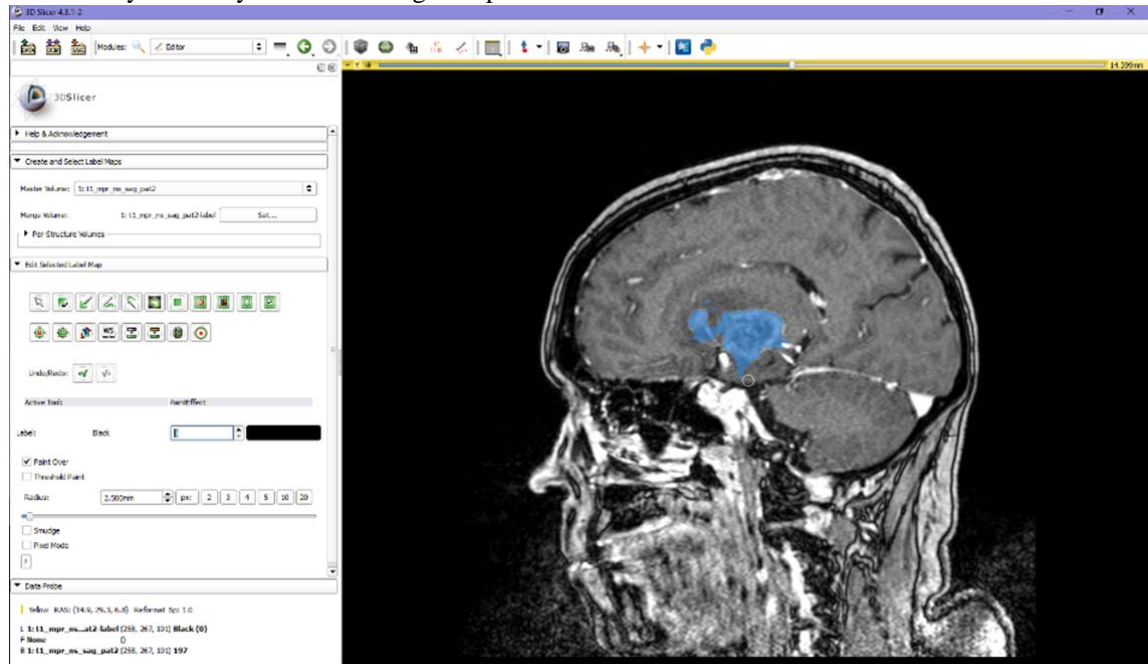
5. The "non-tumor" label was removed using the "change label" function (delineated in red)

6. This label was then smoothened by using the "remove islands" (a) effect, and the "erode" (b) and "dilate" (c) functions in the editor module.

7. If necessary manually corrected using the "paint effect" function.

8. The label statistics module was used to find the volume of the tumor