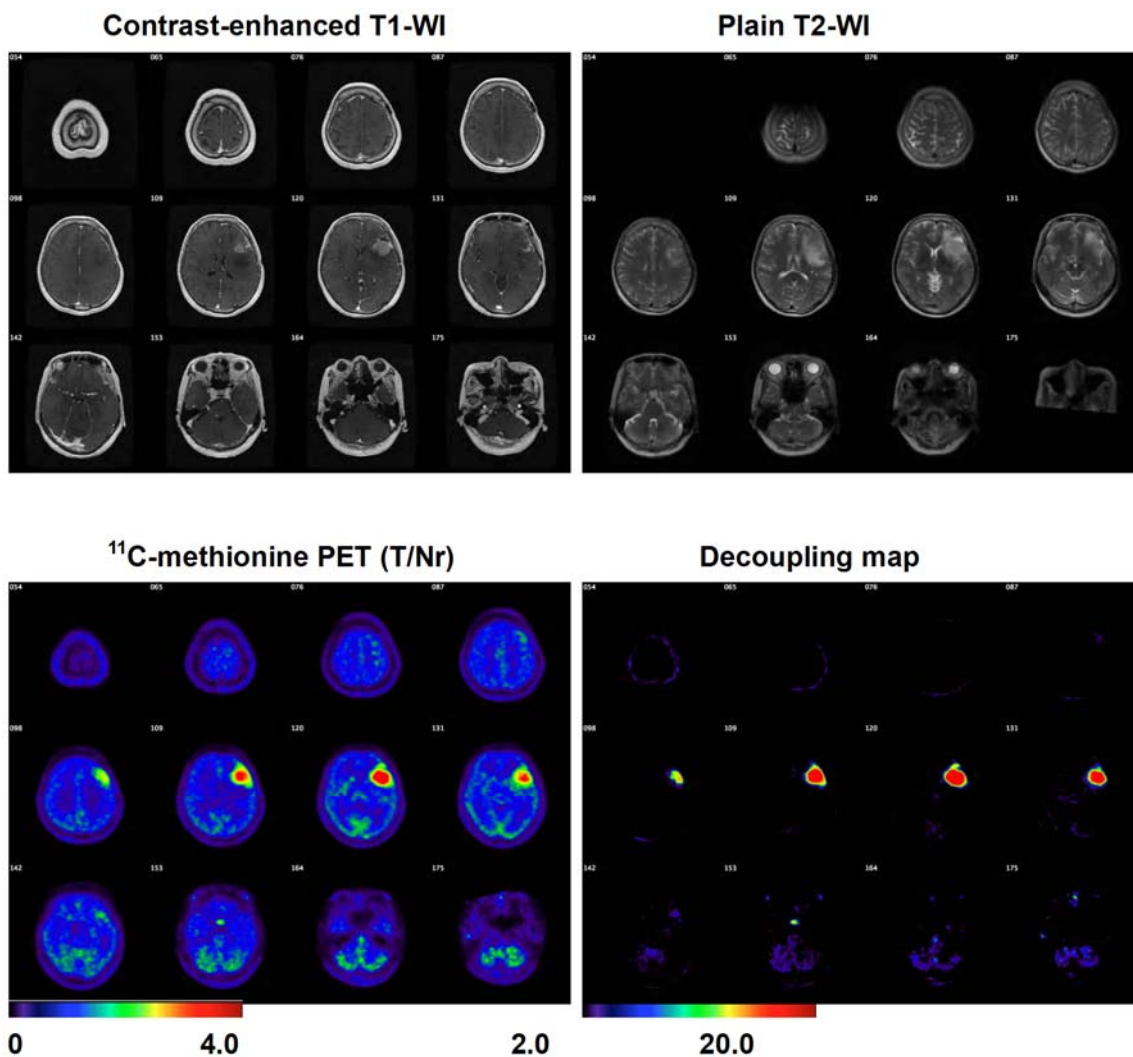


## **Supplemental Figure 1**

Image qualities of  $^{11}\text{C}$ -methionine PET obtained by 12 minute and 40 minute scans are evaluated in two glioma cases. T/N ratios within the described region-of-interest including both normal and pathological tissue are plotted in a voxel-wise manner and compared (right figures). 12 minute scans were comparable to 40 minute scan with  $R^2$  being 0.99, justifying the use of 12 minute scans for further analysis.



### Supplemental Figure 2

Global image reconstruction of the decoupling score into decoupling map is shown. In the decoupling map,  $^{11}\text{C}$ -methionine uptake by normal brain tissue, mainly by the gray matter is eliminated and potential tumor cell infiltration lesions are highlighted. The decoupling score is less than 2.0 in tumor non-infiltrated tissues, such as the contralateral brain. Note that the decoupling score is relatively high in the cerebellum due to high  $^{11}\text{C}$ -methionine uptake of the cerebellum compared to the cerebrum.