



**OPEN** **Publisher Correction:**  
**Imaging the transmembrane  
and transendothelial sodium  
gradients in gliomas**

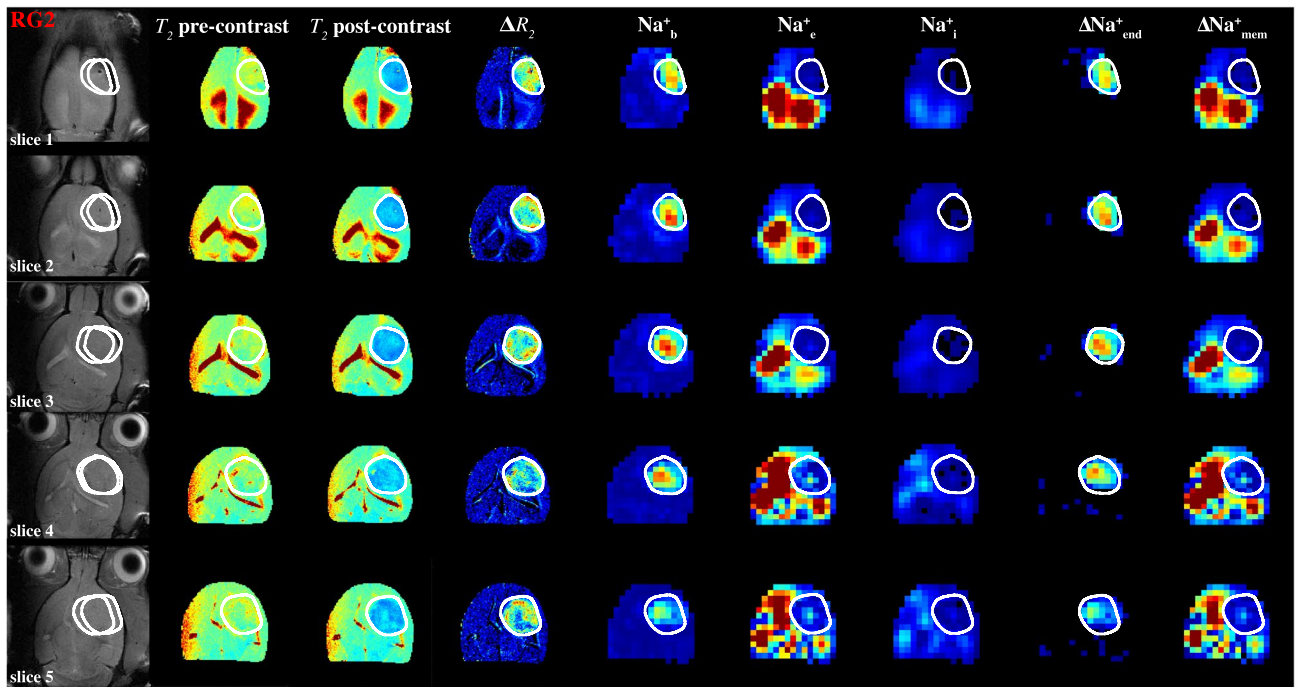
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The original version of this Article contained an error in Figure 4 where MRI images in the far left column had multiple white circles. The original Figure 4 and accompanying legend appear below.

The original Article has been corrected.



**Figure 4.** Spatial distributions of compartmentalized  $^{23}\text{Na}$  signals ( $\text{Na}^+_b$ ,  $\text{Na}^+_e$ ,  $\text{Na}^+_i$ ) as well as transendothelial ( $\Delta\text{Na}^+_{\text{end}}$ ) and transmembrane ( $\Delta\text{Na}^+_{\text{mem}}$ ) gradients in an RG2 tumor. The high-resolution  $^1\text{H}$ -MRI data are shown in the left four columns, whereas the lower resolution  $^{23}\text{Na}$ -MRSI data are shown in the next five columns on the right. The left column shows the tumor location (white outline) on the anatomical  $^1\text{H}$ -MRI (left), whereas the next two columns show the  $T_2$  maps (range shown: 0–100 ms) before and after TmDOTP $^{5-}$  injection, and the subsequent column depicts the  $\Delta R_2$  map (i.e., difference between  $1/T_2$  maps before and after, range shown: 0–30  $\text{s}^{-1}$ ), which is proportional to  $[\text{TmDOTP}^{5-}]$  in healthy and tumor tissues. Since  $\Delta R_2$  values are more heterogeneous within the tumor, the  $^{23}\text{Na}$ -MRSI data are needed to separate the blood and extracellular compartment signals for the tumor. Since the integral of each  $^{23}\text{Na}$  peak represents the  $[\text{Na}^+]$ , the respective three columns show the integral maps of  $\text{Na}^+_b$ ,  $\text{Na}^+_e$ , and  $\text{Na}^+_i$  from left to right (i.e.,  $\int\text{Na}^+_b$ ,  $\int\text{Na}^+_e$ ,  $\int\text{Na}^+_i$ ). The last two columns on the right show  $\Delta\text{Na}^+_{\text{end}} = \int\text{Na}^+_b - \int\text{Na}^+_e$  and  $\Delta\text{Na}^+_{\text{mem}} = \int\text{Na}^+_e - \int\text{Na}^+_i$ . The  $\int\text{Na}^+_b$  map reveals low values in healthy tissue compared to tumor tissue, and within the tumor boundary a high degree of heterogeneity. The  $\int\text{Na}^+_e$  map reveals low values in tumor and normal tissues, but within the tumor boundary a small degree of heterogeneity is visible while ventricular voxels show very high values. The  $\int\text{Na}^+_i$  map reveals low values ubiquitously except some ventricular voxels. The  $\Delta\text{Na}^+_{\text{end}}$  map reveals dramatically high values within the tumor only. The  $\Delta\text{Na}^+_{\text{end}}$  was driven primarily by an increase of  $\int\text{Na}^+_b$  inside the tumor and which was more pronounced in superficial regions of the brain compared to deeper slices. The  $\Delta\text{Na}^+_{\text{mem}}$  map shows low values in tumor tissue compared to normal tissue, although ventricular voxels show very high values. The  $\Delta\text{Na}^+_{\text{mem}}$  is driven primarily by decreased  $\int\text{Na}^+_e$  and thus shows similar level of heterogeneity as the  $\int\text{Na}^+_e$  map. All maps use the same color scale and are relative. See Figure S4 for an example for a U87 tumor.



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