Supplemental Figure 1: (A) Predicted error in CBF caused by not accounting for blood-borne activity. Tissue activity curves including vascular tissue activity (Eqn. 1) were generated for regional/i^{th} voxel CBF (f_i) from 10-100 mL/100 g/min using a theoretical arterial input function. Arterial blood volume in a voxel (CBV_i) was estimated based on: $CBV_i = CBV_{wb} *(f_i/f_{wb})^{0.29}$, where f_{wb} is whole brain CBF and CBV_{wb} is whole brain arterial blood volume. To predict error in CBF from using the MR-reference approach (Eqn. 2), f_i was calculated with $f_{wb} = 50$ mL/100 g/min and $\lambda = 90$mL/100g. The percent error in the MR-reference CBF (relative to the corresponding input values) was plotted against the input CBF values for acquisitions lengths of 1 - 5 minutes. Error in CBF was less than 2% over the entire range of CBF values for acquisition lengths greater than 3 minutes. (B) Simulated tissue activity curves with (blue) and without (red) an arterial contribution.