**SUPPLEMENTARY METHODS**

***Cerebral blood flow measurement***

To measure cerebral blood flow (CBF) changes caused by anesthetic depth change, we acquired a series of dynamic susceptibility contrast (DSC) scans on an additional group of 6 rats. The timeline and order of propofol dose presentation was the same as that used for the functional connectivity experiments: (1) equilibration time of 5-10 min, (2) continuous increase of propofol from 20 to 100 mg/kg/h and (3) all rats were held at each propofol dose for 30 min after equilibration. A gradient echo planar imaging sequence, 120 time points, TR/TE = 1000ms/18.8ms, matrix 96x96, FOV=35 mm, flip angle 52.7, 9 sagittal slices, Slice thickness = 1mm (Same geometry as rsMRI) was used. DSC scans were only performed at 20, 60, and 100 mg/kg/h to allow for a 1-hour interval between 2 consecutive DSC scans, so that there was enough time for the signal to recover. In each session, 2 min of EPI were collected: 1 min baseline and 1 min after Gadolinium-DTPA bolus injection (0.1mmol/kg, 0.2ml/kg at 10ml/min).

The arterial input function (AIF) was determined from brain arterial branches. The intravoxel tissue residue function was derived by deconvolving the tissue concentration time curves with the AIF using singular value decomposition (OstergaardL MRM 36, 715-725 1996). CBF was determined as the peak of the residue function. Relative cerebral blood flow (rCBF) was normalized to whole brain average at 20mg/kg/h for each rat to control for individual baseline CBF variation. The normalized rCBF maps of all 6 animals are shown in **supplementary Figure 2**.