

Supplementary methods

Western blotting assay

Glucose transporter 3 (GLUT-3): Abcam

Glucose transporter 1 (GLUT-1): Proteintech Group, Inc. (Chicago, USA).

Lactate content determination in brain

Lactate contents were determined via the nicotinamide adenine dinucleotide (NADH)-phenazine methosulfate (PMS)-nitro blue tetrazolium (NBT) coupling reaction. The produced diformazan was spectrophotometrically measured at 570 nm, which was linear with the lactate level. The supernatants from brain homogenate were used for the determination of lactate contents with the commercial kit (Nanjing Jiancheng Bioengineering Institute, Nanjing, China). All values were normalized by the total protein concentration.

Supplemental Figures and Figure Legends

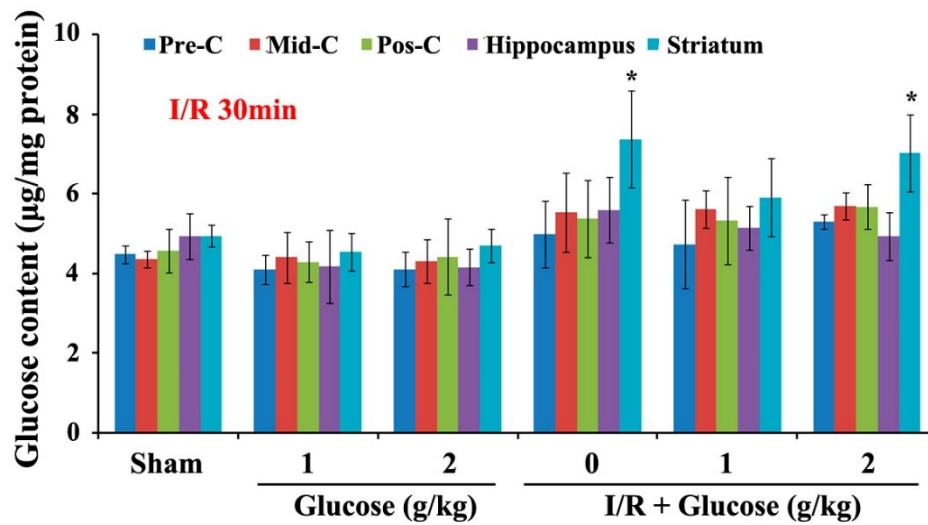


Figure 1 Changes of cerebral glucose levels after reperfusion for 30 min. Glucose levels were determined in different brain regions including prefrontal cortex (Pre-C), middle cortex (Mid-C), posterior cortex (Pos-C), striatum and hippocampus. Data are expressed as mean \pm SD. * $p < 0.05$ vs. Sham, $n = 6$.

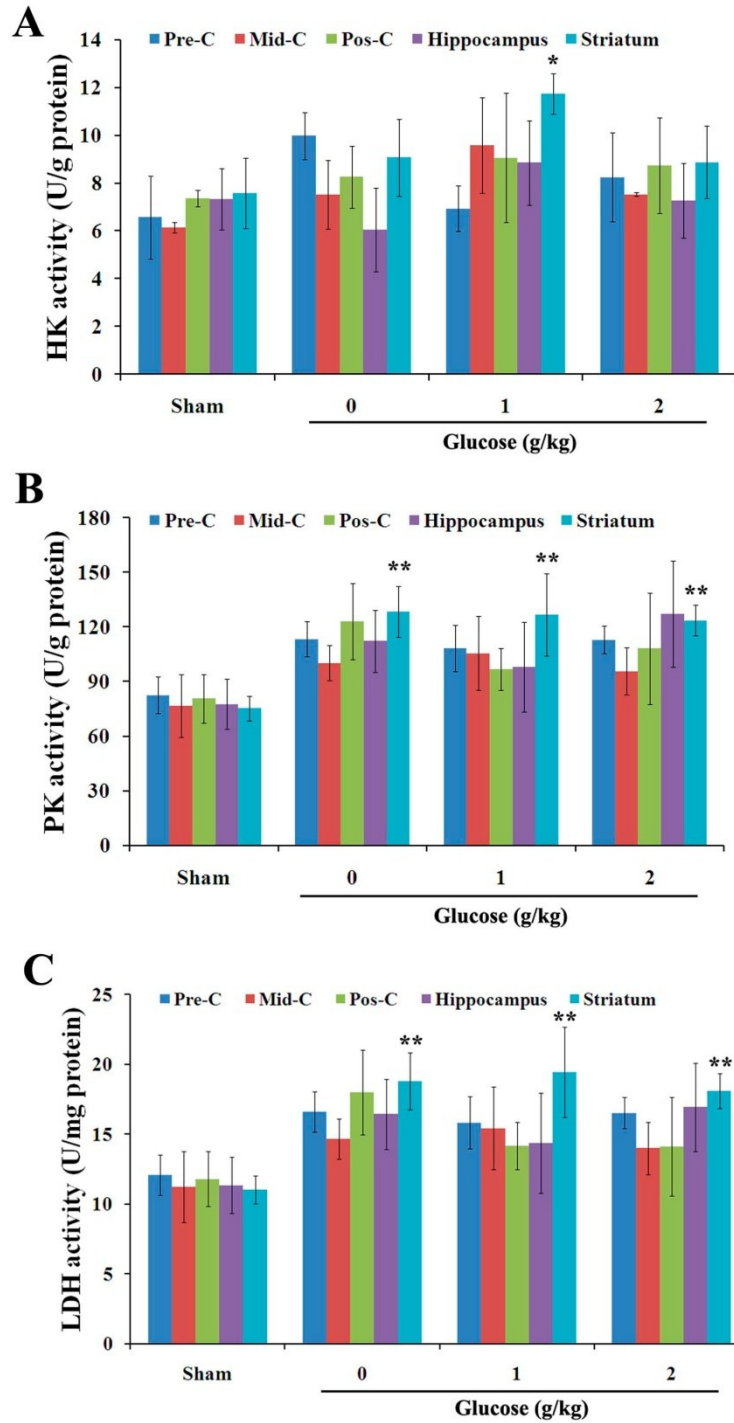


Figure 2 Effects of blood glucose fluctuation on glucose metabolism in ipsilateral hemisphere after I/R 30 min. (A) Hexokinase (HK), (B) pyruvate kinase (PK), (C) lactate dehydrogenase (LDH) activity in prefrontal cortex (Pre-C), middle cortex (Mid-C), posterior cortex (Pos-C), striatum and hippocampus. Data are expressed as mean \pm SD. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ vs. Sham, $n = 6$

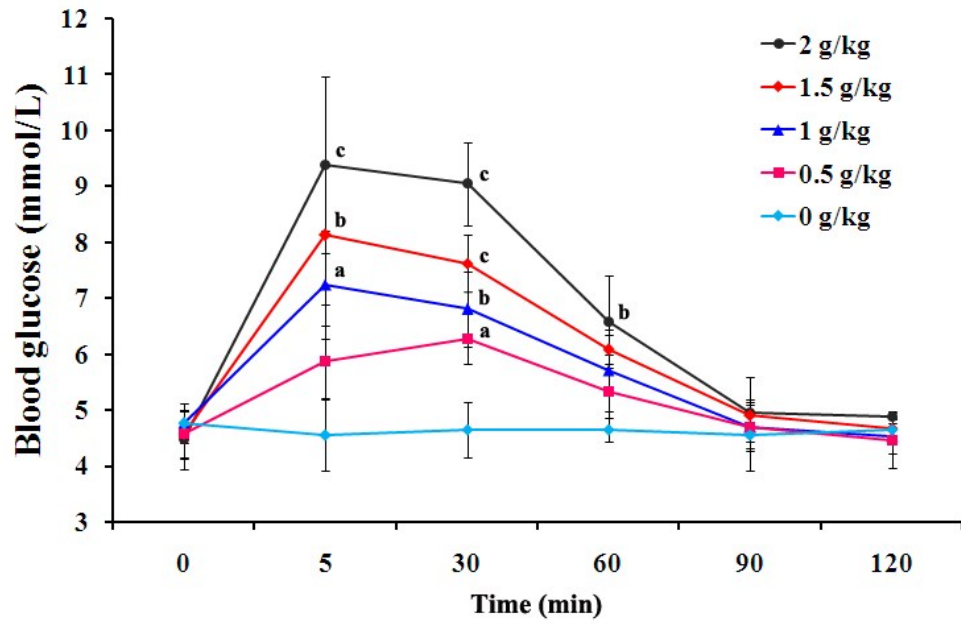


Figure 3 Blood glucose changes after single intraperitoneal injection of glucose (0, 0.5, 1, 1.5 or 2 g/kg) in rats. Data are expressed as mean \pm SD. ^a $p < 0.5$, ^b $p < 0.01$, ^c $p < 0.001$ vs. 0 g/kg group, n = 10

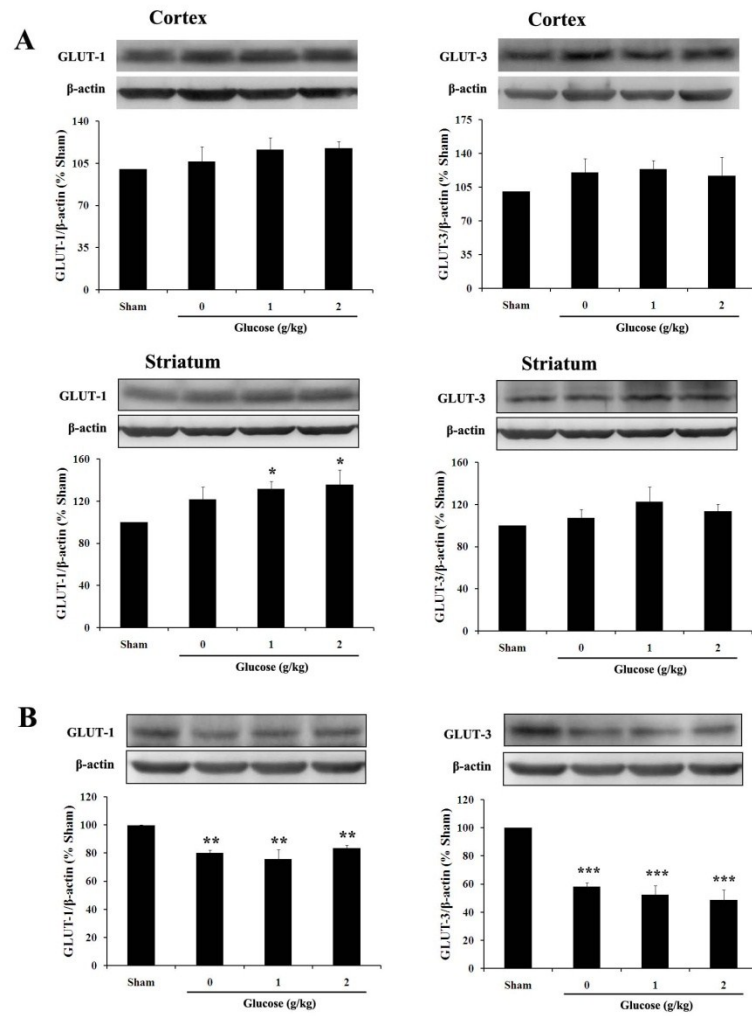


Figure 4 Effects of blood glucose fluctuation on protein expressions of glucose transporter (GLUT) -1/-3 in ischemic hemisphere after I/R 30 min (A) and I/R 24 h (B). Data are expressed as mean \pm SD. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ vs. Sham, $n = 3$

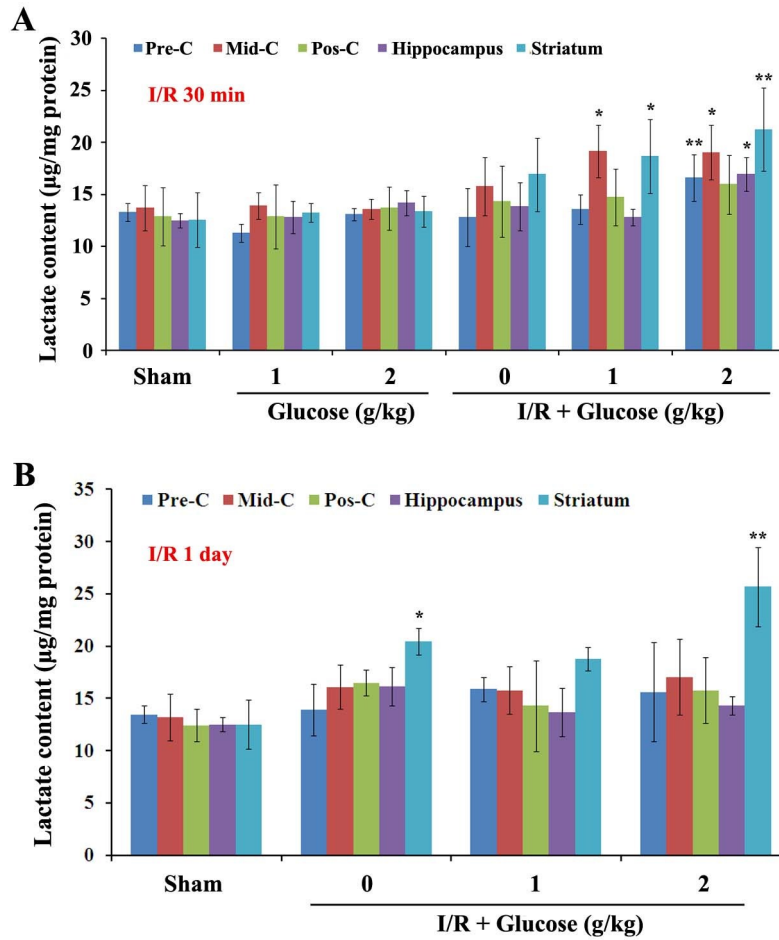


Figure 5 Changes of cerebral lactate levels after I/R 30 min (A) and I/R 24 h (B). Lactate contents were determined in different brain regions including prefrontal cortex (Pre-C), middle cortex (Mid-C), posterior cortex (Pos-C), striatum and hippocampus. Data are expressed as mean \pm SD. * $p < 0.05$, ** $p < 0.01$ vs. 1 g/kg group, $n = 6$