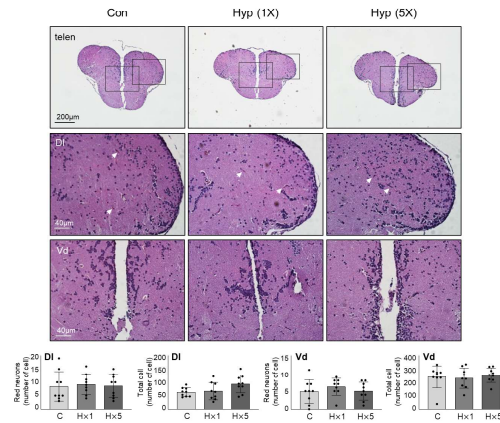


Supplementary Figure Legend

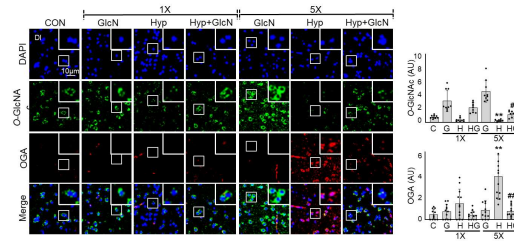
Supplementary Figure 1



Supplementary Figure 1. SH and RH does not induce neuronal cell death in DI of zebrafish brain.

Zebrafish were exposed to SH (1X) or RH (5X) and the brain were stained with Hematoxylin and Eosin (H&E). Representative telencephalon H&E images (10x) were shown. Enlarged images (40x) are presented in the black boxes and white arrows represent pyknotic nuclei or eosinophilic neurons (red neurons). Graphs represent the number of hematoxylin positive cell or red neurons ($n=3/\text{group}$). Statistical analysis was carried out by Kruskal-Wallis with false discovery rate (FDR) multiple comparison test ($p=n.s$).

Supplementary Figure 2



Supplementary Figure 2. Effects of GlcN *O*-GlcNAcylation and OGA levels in control, SH, and RH zebrafish brains

Zebrafish were intraperitoneally injected with GlcN at 2 h prior to the initiation of each bout of single (SH, 1X) or repeated (RH, 5X) hypoxia. Representative confocal images (x40) of DAPI (blue), *O*-GlcNAc (green), and OGA (red) and merged immunofluorescence images of the DI region of zebrafish telencephalons. Enlarged images are presented in the white boxes. Graphs represent densitometric quantification of *O*-GlcNAc or OGA (n=3~4/group). Statistical analysis was carried out by Kruskal-Wallis with false discovery rate (FDR) multiple comparison test. (* $p < 0.05$, ** $p < 0.01$ versus Cont, # $p < 0.05$, ## $p < 0.01$ versus RH).