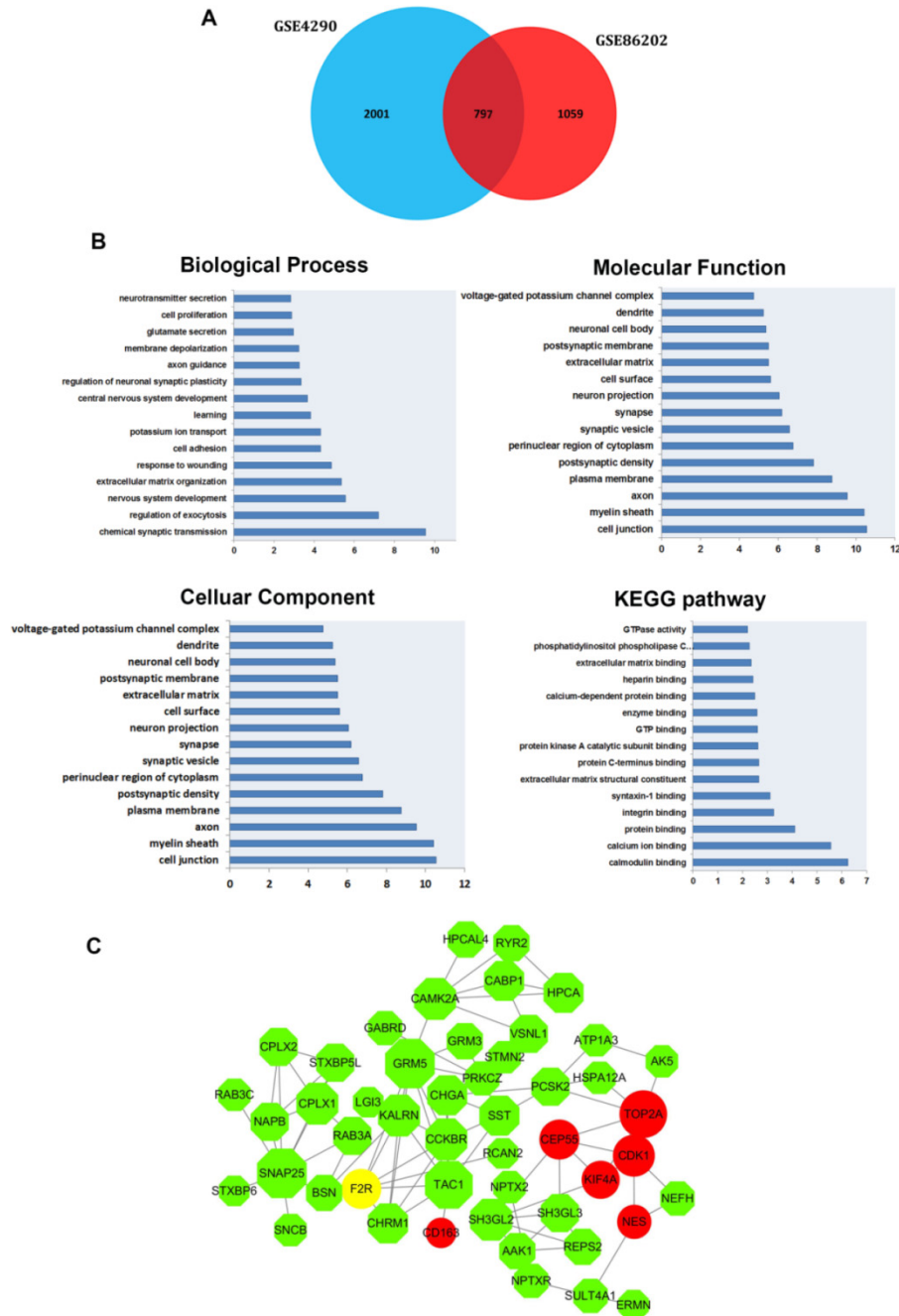
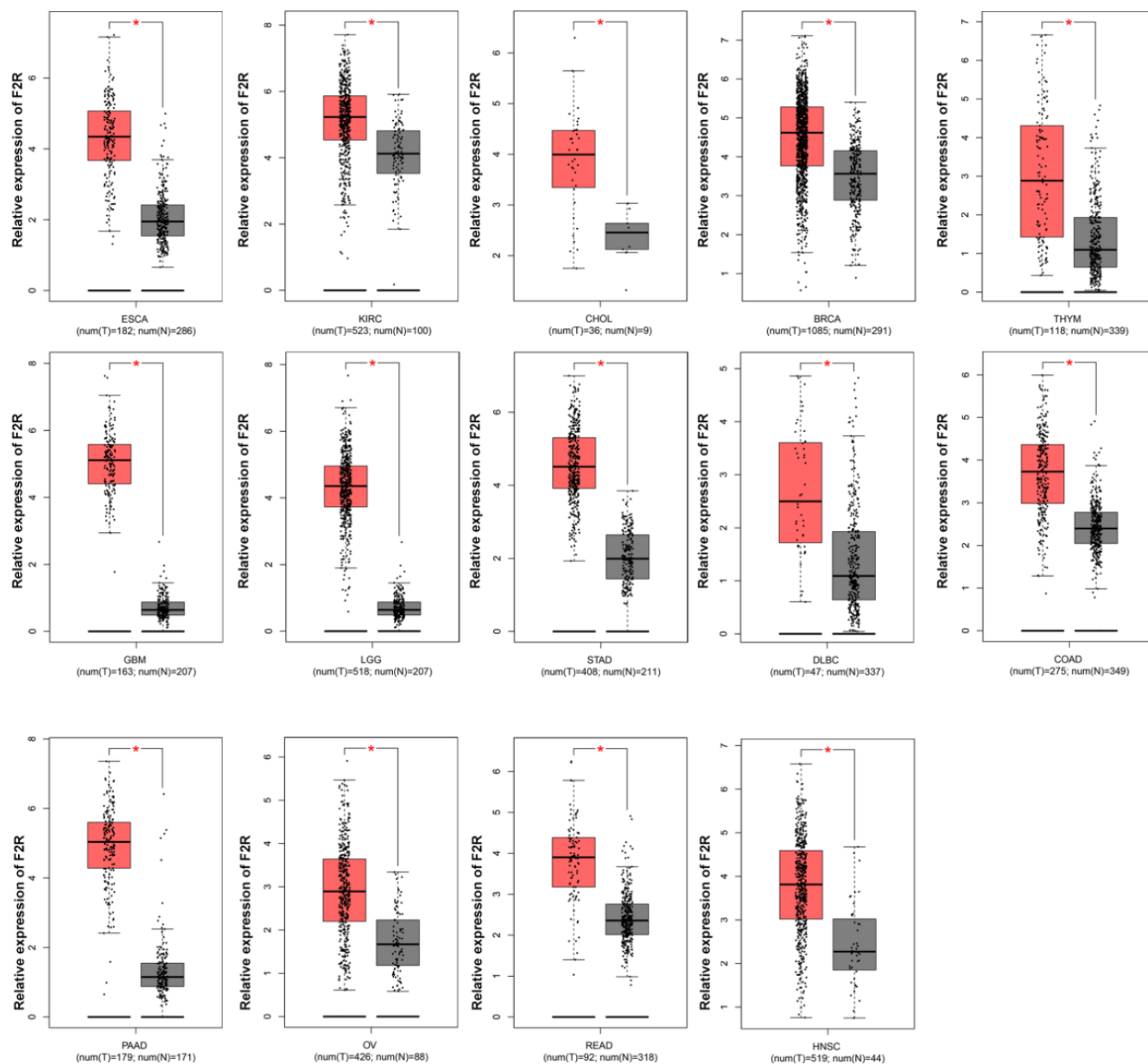


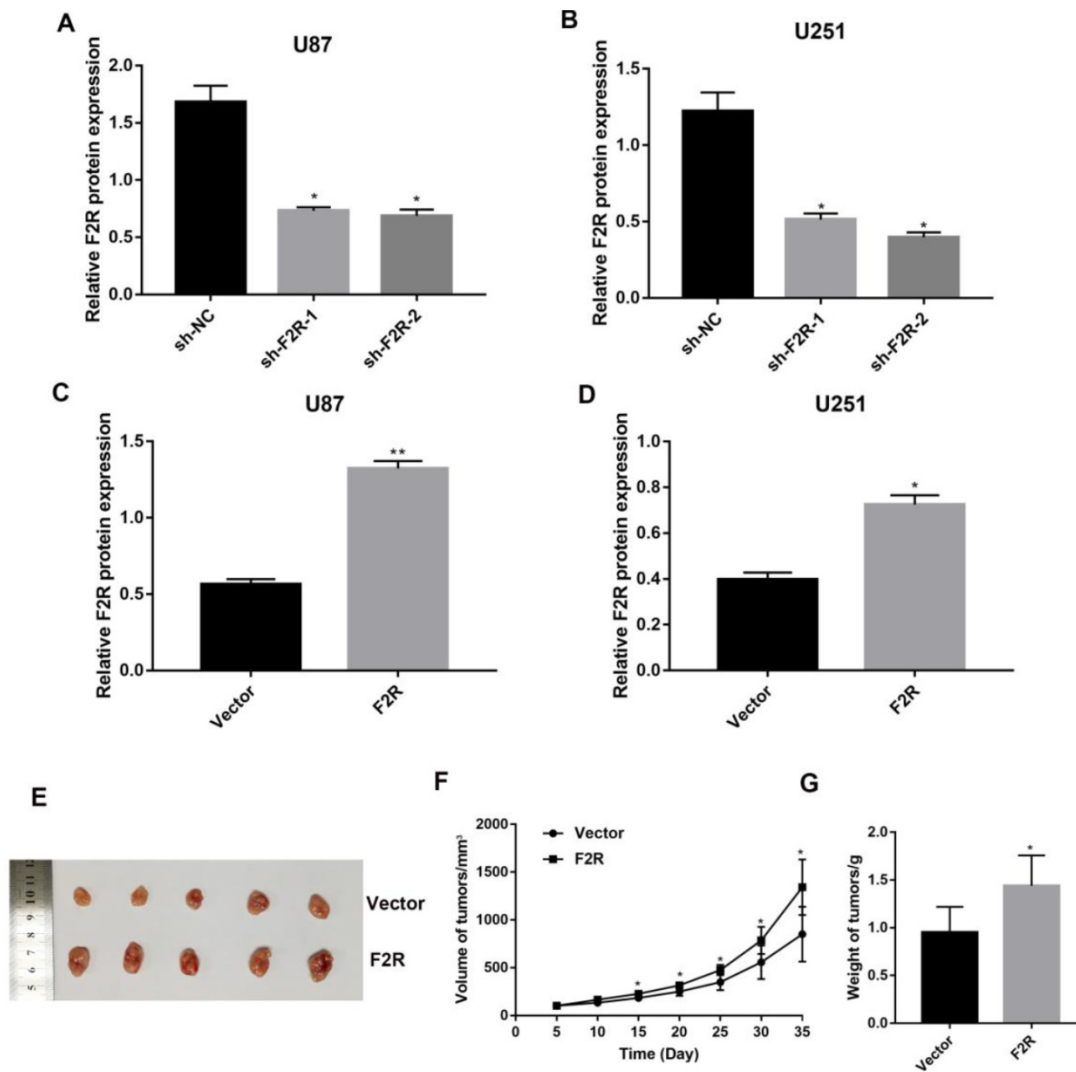
SUPPLEMENTARY FIGURES



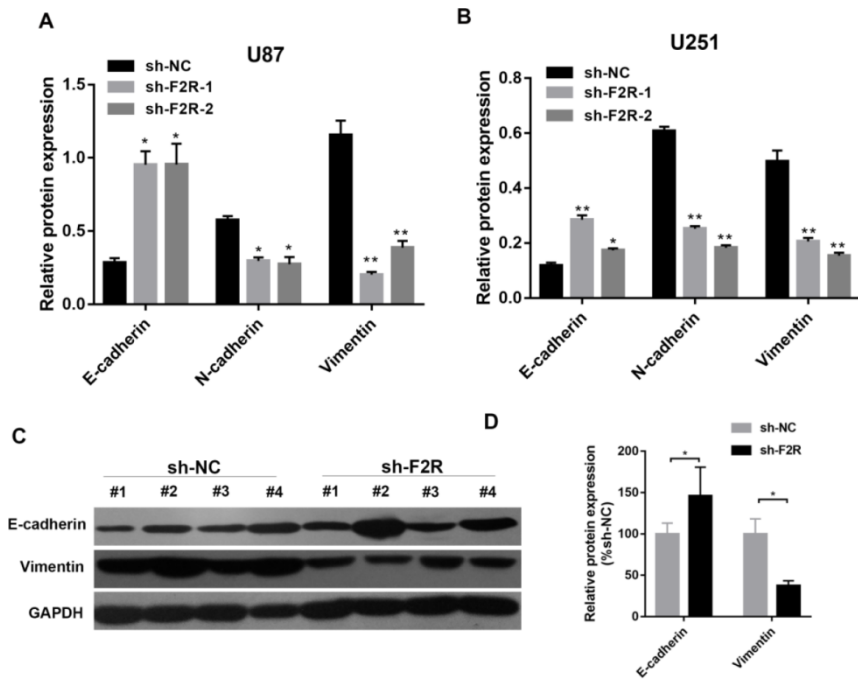
**Supplementary Figure 1. F2R was predicted as a key regulating gene in glioma, according to online database information. (A)** Overlap of the dysregulated genes from GSE4290 and GSE86202 using GRO2R online analysis. Screen standard:  $P < 0.05$ , fold change  $> 2$ . **(B)** Enriched pathway analysis, and biological process and molecular function and cellular component analysis of 797 overlapping genes. **(C)** STRING protein-protein interaction analysis on the 797 overlapping genes. Red represents up- and green represents downregulated genes. The size of the circle reflects the expression fold change of genes.



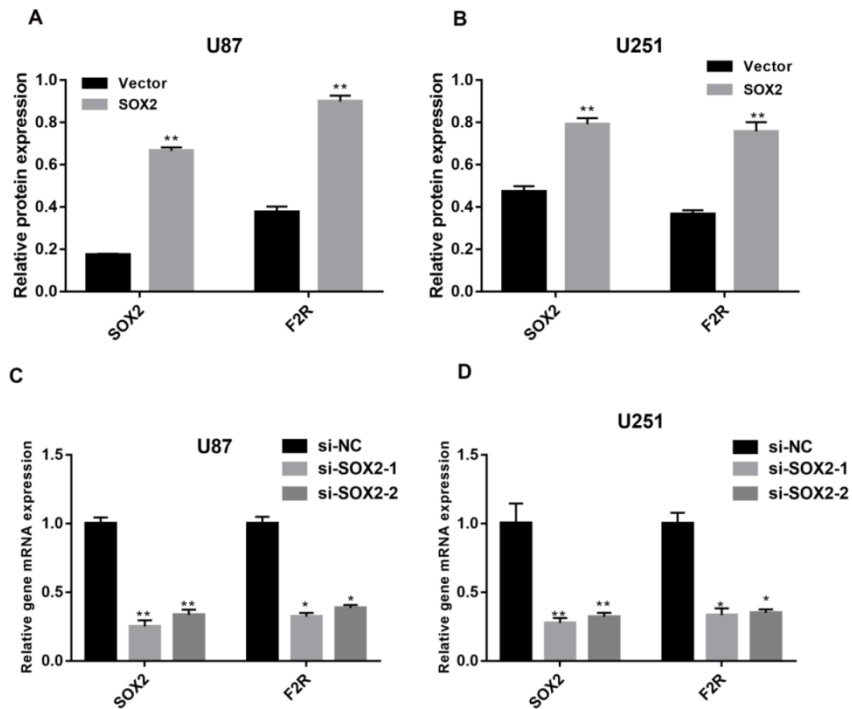
**Supplementary Figure 2. F2R is upregulated in a sum of solid tumors.** Analysis of the expression pattern of F2R in tumor tissues and normal tissues using GEPIA dataset (<http://gepia.cancer-pku.cn/>). ESCA: Esophageal carcinoma; KIRC: kidney renal clear cell carcinoma; CHOL: Cholangio carcinoma; BRCA: breast invasive carcinoma; THYM: Thymoma; GBM: Glioblastoma multiforme; LGG: Brain Lower Grade Glioma; STAD: Stomach adenocarcinoma; DLBC: Lymphoid Neoplasm Diffuse Large B-cell Lymphoma; COAD: colon adenocarcinoma; PAAD: Pancreatic adenocarcinoma; OV: Ovarian serous cystadenocarcinoma; READ: rectum adenocarcinoma; HNSC: head and neck squamous cell carcinoma. Data are presented as the mean  $\pm$  SEM. \*P<0.05



**Supplementary Figure 3.** (A, B). The protein level of F2R in U87 and U251 cell lines stably silencing F2R. Sh-NC represents lentivirus-mediated control groups. Sh-F2R represents lentivirus-mediated F2R silencing groups. (C, D) The protein level of F2R in in U87 and U251 cell lines transfected with F2R overexpression or control plasmid. (E) Macroscopical view of the xenograft tumors derived from U87 cells stably transfected with F2R or Vector. (F) The comparison between the volume of tumors from the two groups at indicated times. (G) The final weight of the xenograft tumors was measured. Data are presented as the mean  $\pm$  SEM. \* $P < 0.05$  and \*\* $P < 0.01$ .



**Supplementary Figure 4.** The protein level of E-cadherin, N-cadherin and Vimentin in U87 (A) and U251 (B) cell lines stably silencing F2R. (C and D) The protein level of E-cadherin, and Vimentin in xenografts were determined by Western blot. Sh-NC represents lentivirus-mediated control groups. Sh-F2R represents lentivirus-mediated F2R silencing groups. Data are presented as the mean  $\pm$  SEM. \* $P < 0.05$  and \*\* $P < 0.01$ .



**Supplementary Figure 5.** The protein level of SOX2 and F2R in U87 (A) and U251 (B) cell lines overexpressing SOX2. The mRNA expression of SOX2 and F2R in U87 (C) and U251 (D) cell lines silencing SOX2. Data are presented as the mean  $\pm$  SEM. \* $P < 0.05$ , \*\* $P < 0.01$ .