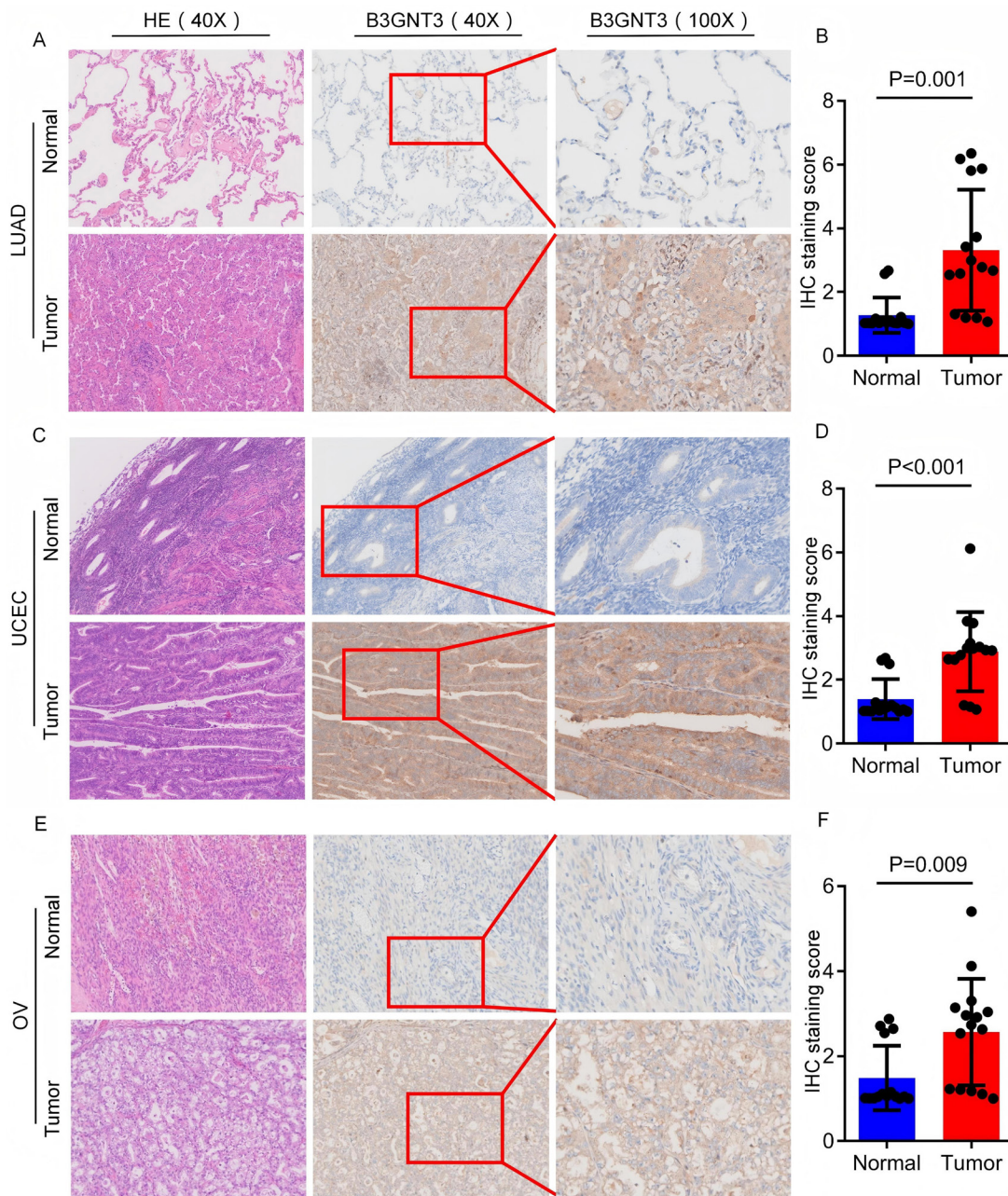


**Figure S1** The detailed analysis workflow. GEPIA2.0, Gene Expression Profiling Interactive Analysis 2.0; HPA, Human Protein Atlas; UALCAN, University of Alabama Cancer Database; TIMER2.0, Tumor Immune Response Estimation and Analysis 2.0; STRING, Search Tool for the Retrieval of Interacting Genes/Proteins; *B3GNT3*, beta-1,3-N-acetylglucosaminyltransferase 3; CAFs, cancer-associated fibroblasts; PPI, protein-protein interaction; GO, Gene Ontology; KEGG, Kyoto Encyclopedia of Genes and Genomes; PAAD, pancreatic adenocarcinoma; COAD, colon adenocarcinoma; LUAD, lung adenocarcinoma; UCEC, uterine corpus endometrial carcinoma; OV, ovarian serous cystadenocarcinoma.



**Figure S2** Validation of case through immunohistochemical staining. (A) Representative images of LUAD are shown (HE, 40 $\times$ ; IHC, 40 $\times$ ; IHC, 100 $\times$ ). (B) The staining intensity is quantified by immunohistochemical score, results show that *B3GNT3* is significantly upregulated in LUAD tumor tissues compared to normal tissues ( $P=0.001$ ). (C) Representative images of UCEC are shown (HE, 40 $\times$ ; IHC, 40 $\times$ ; IHC, 100 $\times$ ). (D) The staining intensity is quantified by immunohistochemical score, results show that *B3GNT3* is significantly upregulated in UCEC tumor tissues compared to normal tissues ( $P<0.001$ ). (E) Representative images of OV are shown (HE, 40 $\times$ ; IHC, 40 $\times$ ; IHC, 100 $\times$ ). (F) The staining intensity is quantified by immunohistochemical score, results show that *B3GNT3* is significantly upregulated in OV tumor tissues compared to normal tissues ( $P=0.009$ ). *B3GNT3*, beta-1,3-N-acetylglucosaminyltransferase 3; LUAD, lung adenocarcinoma; UCEC, uterine corpus endometrial carcinoma; OV, ovarian serous cystadenocarcinoma; H&E, hematoxylin and eosin; IHC, immunohistochemical.