

Figure S1. The knockdown efficiency of siRNAs for each target gene. NOZ, TYGBK-1, or TGBC2TKB cells were transfected with siRNAs targeting *GLI1*, *GLI2*, *GLI3*, *HIF-1 α* , or negative control siRNA. The relative expression of (A) *Gli1*, (B) *Gli2*, (C) *Gli3*, and (D) *HIF-1 α* mRNA of each GBC cell lines were evaluated by real time RT-qPCR analysis 48 h later. * $P < 0.05$, ** $P < 0.01$ and *** $P < 0.001$. Bar, mean \pm SD. siRNA or si, small interfering RNA; *GLI1*, glioma-associated oncogene homolog 1; *HIF-1 α* , hypoxia-inducible factor 1 α ; GBC, gallbladder cancer; RT-qPCR, reverse transcription-quantitative PCR.

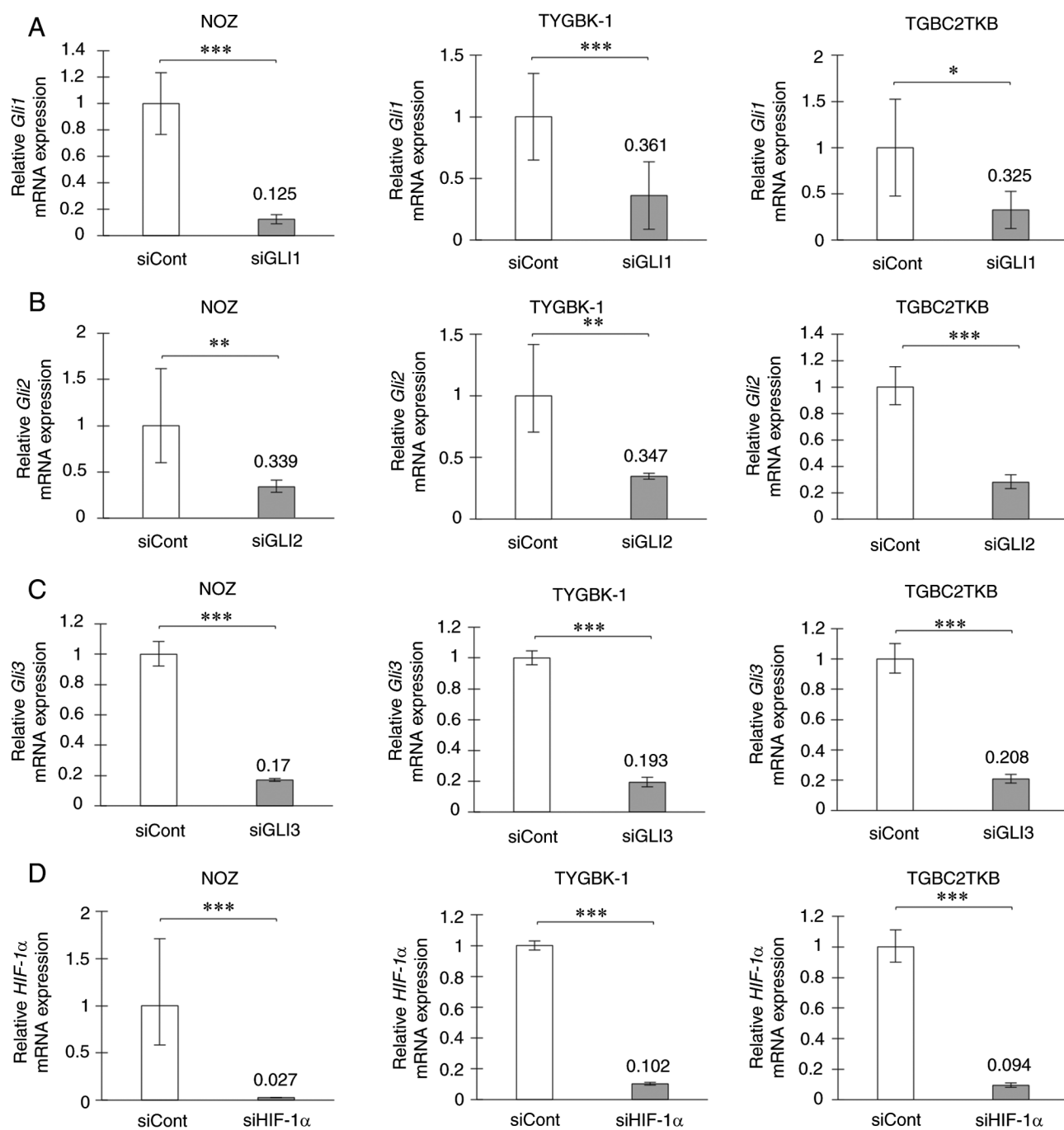


Figure S2. The knockdown efficacies of GLI2 mRNA in a GBC cell line during the time course after transfection. (A) NOZ cells were transfected with siRNAs targeting GLI2 or negative control siRNA. The relative expression of *Gli2* mRNA were evaluated by real time RT-qPCR analysis on days 0, 2, 5, 8, and 11. GLI2, glioma-associated oncogene homolog 2; GBC, gallbladder cancer; siRNA or si, small interfering RNA; RT-qPCR, reverse transcription-quantitative PCR.

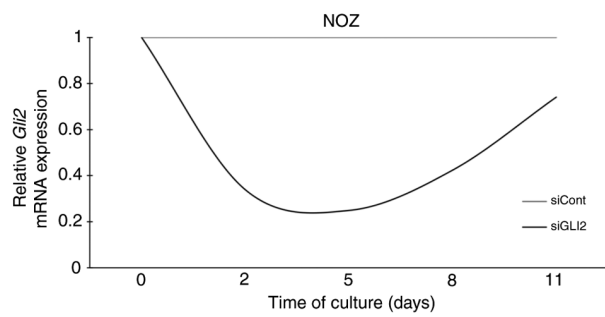


Figure S3. The 5-year survival rate in the patient group.
(A) Kaplan-Meier survival curves of all GBC patients of all stages. GBC, gallbladder cancer.

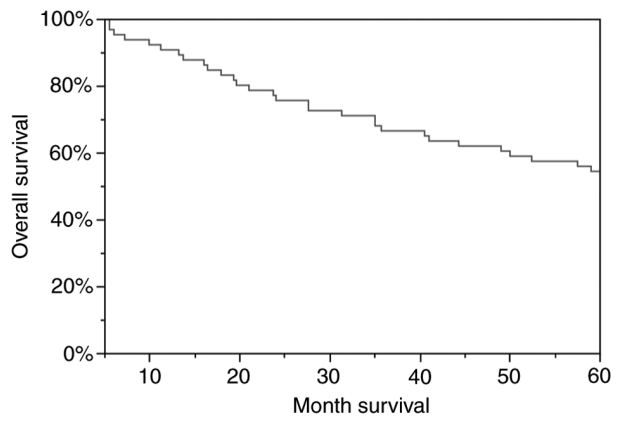


Table SI. Multivariate analysis using 66 GBC patients of overall survival.

Variable	HR (95% CI)	P-value
UICC T category		
Tis/T1a and T1b/T2a and T2b/T3a and T3b	1.8489 (0.7986-4.5378)	0.1637
UICC N category		
N0/N1	1.7976 (0.7072-4.8917)	0.2299
Lymphatic permeation		
ly(-)/ly(+)	2.0405 (0.8499-5.3643)	0.1251
Venous invasion		
v(-)/v(+)	1.4559 (0.5665-3.9295)	0.4428
PD-L1 expression		
Negative/Positive	2.0328 (0.7755-5.1586)	0.1384
GLI2 expression		
Low expression/High expression	0.5727 (0.2345-1.3187)	0.2025

GBC, gallbladder cancer; HR, hazard ratio; CI, confidence interval; UICC, Union for International Cancer Control; PD-L1, programmed cell death ligand 1; GLI2, glioma-associated oncogene homolog 2.

Table SII. Multivariate analysis using 66 GBC patients of overall survival.

Variable	HR (95% CI)	P-value
Age		
<69.5/≥69.5	1.0227 (0.4717-2.2058)	0.9541
Sex		
Female/Male	1.3530 (0.5993-3.0548)	0.4668
UICC T category		
Tis/T1a and T1b/T2a and T2b/T3a and T3b	1.9018 (0.9011-4.1502)	0.0974
UICC N category		
N0/N1	1.8257 (0.7024-5.0586)	0.2273
Lymphatic permeation		
ly(-)/ly(+)	2.3010 (0.9354-6.1546)	0.0796

GBC, gallbladder cancer; HR, hazard ratio; CI, confidence interval; UICC, Union for International Cancer Control.

Table SIII. Multivariate analysis using 66 GBC patients of overall survival.

Variable	HR (95% CI)	P-value
UICC T category		
Tis/T1a and T1b/T2a and T2b/T3a and T3b	1.9533 (0.9335-4.1999)	0.0795
UICC N category		
N0/N1	1.8894 (0.7463-5.1231)	0.1911
Lymphatic permeation		
ly(-)/ly(+)	2.3806 (0.9973-6.2380)	0.0610

GBC, gallbladder cancer; HR, hazard ratio; CI, confidence interval; UICC, Union for International Cancer Control.