

Table SI. Information of patients whose tissues was used in PCR and immunohistochemistry analyses.

Patient	Sex	Age, years	Sample	Virus infection	Pathology	Tumor grade	TNM staging	IHC results
H	Female	52	H_T	None	ICC tumor	Poorly differentiated, grade III	T3N1M0	ICC: SPP1 ⁺ , CK19 ⁺
			H_A		ICC adjacent		-	ICC: SPP1 ⁻ , CK19 ⁻
O	Male	63	O_T	None	ICC tumor	Poorly differentiated, grade I	T1NXMX	ICC: SPP1 ⁺ , CK19 ⁺
			O_A		ICC adjacent		-	ICC: SPP1 ⁻ , CK19 ⁻

ICC, intrahepatic cholangiocarcinoma; CK, cytokeratin; SPP1, secreted phosphoprotein 1; T, tumor; A, adjacent.

Table SIII. Number of different type cells in patients with intrahepatic cholangiocarcinoma.

Patient	B	CD4 ⁺	CD8 ⁺	DCs	Fibroblasts	Hepatocytes	Macrophages	Malignant	Monocytes	NK
X18	484	2,158	4,570	1,191	16	115	98	584	500	622
X20	17	93	127	44	10	103	20	1,340	41	10
X23	205	409	1,486	635	89	133	370	823	437	286
X24	93	138	185	298	105	7	103	122	227	34
X25	70	79	409	15	47	372	231	750	14	97

B, B cells; CD4⁺, CD4⁺ T cells; CD8⁺, CD8⁺ T cells; DCs, dendritic cells; NK, natural killer cells.

Table SIV. Number of different type cells in patients with intrahepatic cholangiocarcinoma.

Patient	Sample	B	CD4 ⁺	CD8 ⁺	DCs	Fibroblasts	Hepatocytes	Macrophages	Malignant	Monocytes	NK
X18	Tumor	42	7	209	83	9	67	8	494	21	1
	Adjacent	442	2151	4361	1108	8	48	90	90	478	621
X20	Tumor	17	93	127	44	10	103	20	1,340	41	10
X23	Tumor	16	44	225	159	32	90	12	528	48	4
	Adjacent	189	365	1261	476	57	43	358	295	390	282
X24	Tumor	93	138	185	298	107	7	103	122	227	37
X25	Adjacent	70	79	409	15	47	372	231	750	14	97

B, B cells; CD4⁺, CD4⁺ T cells; CD8⁺, CD8⁺ T cells; DCs, dendritic cells; NK, natural killer cells