Supplementary

Table S1 Overview of Sequencing Depth Sequencing Depth and Tumour Cellularity from WGS of 20 CCA samples and matched whole blood controls

Sample	Tumour Coverage	Normal Coverage	Cellularity
BTC_9001	46.6X	31.7X	88.4%
BTC_9002	53.4X	37.0X	91.5%
BTC_9003	39.4X	36.0X	83.5%
BTC_9004	39.3X	29.9X	78.8%
BTC_9005	44.3X	33.9X	74.9%
BTC_9006	38.5X	32.8X	93.3%
BTC_9007	47.2X	33.3X	43.9%
BTC_9009	41.0X	29.1X	89.5%
BTC_9010	48.2X	31.8X	79.6%
BTC_9011	45.5X	35.5X	97%
BTC_9012	44.0X	30.9X	87.2%
BTC_9013	55.6X	38.0X	79.9%
BTC_9014	46.8X	30.2X	70.4%
BTC_9015	51.0X	32.9X	72.1%
BTC_9016	56.5X	38.9X	36.3%
BTC_9017	55.1X	36.2X	75.8%
BTC_9018	48.7X	32.4X	75.5%
BTC_9019	48.5X	30.9X	84.5%
BTC_8002	47.4X	37.6X	85.4%
PANX_1237	46.0X	47.0X	92.8%

WGS, whole genome sequencing; CCA, cholangiocarcinoma; BTC, biliary tract cancer.

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Table S2 Germline Mutations Detected Across Cholangiocarcinoma Patient Cohort

Sample	SNVs	Indels	Structural Variants	Germline Mutations	SNP ID	Clinical Significance
BTC_9003	3672	436	27	ATM M1321I	rs35184530	Conflicting, Likely Benign
BTC_9006	4168	419	172	BRCA2 E2856A	rs11571747	Conflicting, Likely Benign
				ATM D1853V	rs1801673	Conflicting Interpretation
BTC_9007	2087	103	3	ATM D1853V	rs1801673	Conflicting Interpretation
				ATM Y2202D	rs730881311	Uncertain Significance
BTC_9008	5209	189	318	MUTYH L420M	rs144079536	Uncertain Significance
BTC_9010	3544	329	112	ATM F582L	rs2235006	Benign
				ATM S707P	rs4986761	Conflicting, Likely Benign
BTC_9011	57061	42627	43	MLH1 G67R	rs63750206	Pathogenic
				ATM F3002L	rs540172506	Uncertain Significance
BTC_9013	3720	272	20	POLD1 V124A	rs199993010	Uncertain Significance
				BRCA2 S3131P	rs398122613	Uncertain Significance
				APC E129Q	rs376628500	Conflicting Interpretation
				MUTYH V326L	rs147718169	Uncertain Significance
BTC_9015	4779	289	25	POLE R2165H	rs5745068	Benign
BTC_9017	5142	421	22	MUTYH R423C	rs150792276	Conflicting Interpretation
BTC_9018	19347	1826	207	BRCA2 K2729N	rs80359065	Benign
BTC_9019	5830	338	79	ATM V410A	rs56128736	Conflicting Interpretation
				APC N844K	rs147972247	Benign

SNV, single nucleotide variant; Indel, insertion-deletion; SNP, single nucleotide polymorphism; BTC, biliary tract cancer.

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Table S3 HRDetect Probability Scores across 20 Cholangiocarcinoma Samples

Sample	HR Detect Probability Score (%)
BTC_9001	0.0049
BTC_9002	0.043
BTC_9003	0.20
BTC_9004	0.095
BTC_9005	0.092
BTC_9006	0.026
BTC_9007	0.04
BTC_9009	0.011
BTC_9010	0.15
BTC_9011	0.000058
BTC_9012	0.0069
BTC_9013	0.31
BTC_9014	0.026
BTC_9015	0.00288
BTC_9016	0.0032
BTC_9017	0.087
BTC_9018	0.48
BTC_9019	0.105
PANX_1237	0.00024
BTC_8002	0.00015

BTC, biliary tract cancer.

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