Supplementary Table 1: Association between genomic and imaging variables (univariate logistic regression analysis)

Genomic variable	Imaging variable	Odds Ratio	95%CI_low	95%CI_high	*P* value
Andersen_KRT19 [27]	Multiple HCCs	2.63	0.67	10.35	0.168
Andersen_KRT19 [27]	Size ≥ 5cm	5.50	1.32	22.86	0.019
Andersen_KRT19 [27]	Necrosis	2.78	0.73	10.63	0.136
Andersen_KRT19 [27]	Wash-in/wash-out	1.65	0.35	7.69	0.526
Andersen_KRT19 [27]	Hypovascular	0.79	0.07	9.50	0.850
Andersen_KRT19 [27]	Wash-in/no wash-out	0.59	0.10	3.49	0.556
Andersen_KRT19 [27]	Infiltrative type	9.63	1.64	56.37	0.012
Andersen_KRT19 [27]	Macrovascular invasion	3.50	0.69	17.64	0.129
Andersen_KRT19 [27]	Mosaic appearance	7.00	0.78	63.12	0.083
Andersen_KRT19 [27]	Internal arteries	5.77	0.63	52.63	0.121
Andersen_KRT19 [27]	Capsule	1.03	0.28	3.77	0.959
Andersen_KRT19 [27]	Extranodular growth	2.09	0.51	8.52	0.303
Andersen_KRT19 [27]	Enhancement ratio AP	0.97	0.948	1	0.052
Andersen_KRT19 [27]	Enhancement ratio PVP	0.913	0.847	0.984	0.017
Andersen_KRT19 [27]	Wash-out ratio	0.996	0.976	1.016	0.688
Andersen_KRT19 [27]	Tumour-to-liver contrast ratio AP	0.008	0	20.6	0.228
Andersen_KRT19 [27]	Tumour-to-liver contrast ratio PVP	50520.381	0.861	2963253997	0.053
Boyault_G3 [25]	Wash-in/no wash-out	0.40	0.07	2.37	0.313
Boyault_G3 [25]	Infiltrative type	6.05	1.06	34.38	0.042
Boyault_G3 [25]	Macrovascular invasion	12.73	1.38	117.27	0.025
Boyault_G3 [25]	Mosaic appearance	10.46	1.16	94.48	0.037
Boyault_G3 [25]	Internal arteries	3.20	0.56	18.39	0.192
Boyault_G3 [25]	Capsule	0.88	0.25	3.12	0.843
Boyault_G3 [25]	Extranodular growth	1.57	0.43	5.72	0.497
Boyault_G3 [25]	Enhancement ratio AP	0.989	0.969	1.009	0.278
Boyault_G3 [25]	Enhancement ratio PVP	0.923	0.861	0.988	0.022
Boyault_G3 [25]	Wash-out ratio	0.998	0.978	1.019	0.87
Boyault_G3 [25]	Tumour-to-liver contrast ratio AP	0.348	0	329.925	0.763
Boyault_G3 [25]	Tumour-to-liver contrast ratio PVP	4934.562	0.159	153476892.6	0.107
Cairo_Hepatoblastoma [47]	Wash-in/no wash-out	0.00	0.00	Inf	0.994
Cairo_Hepatoblastoma [47]	Infiltrative type	5.20	0.97	28.02	0.055
Cairo_Hepatoblastoma [47]	Macrovascular invasion	6.75	1.19	38.41	0.031
Cairo_Hepatoblastoma [47]	Mosaic appearance	42054106.55	0.00	Inf	0.994
Cairo_Hepatoblastoma [47]	Internal arteries	40225667.20	0.00	Inf	0.994
Cairo_Hepatoblastoma [47]	Capsule	2.31	0.47	11.42	0.305
Cairo_Hepatoblastoma [47]	Extranodular growth	1.54	0.42	5.68	0.521
Cairo_Hepatoblastoma [47]	Enhancement ratio AP	0.951	0.91	0.993	0.023
Cairo_Hepatoblastoma [47]	Enhancement ratio PVP	0.927	0.865	0.993	0.031
Cairo_Hepatoblastoma [47]	Wash-out ratio	0.985	0.963	1.008	0.199
Cairo_Hepatoblastoma [47]	Tumour-to-liver contrast ratio AP	0.001	0	39.183	0.198
Cairo_Hepatoblastoma [47]	Tumour-to-liver contrast ratio PVP	13024.724	0.513	330736283.4	0.067
Chiang_Proliferation [22]	Wash-in/no wash-out	0.28	0.03	2.60	0.261
Chiang_Proliferation [22]	Infiltrative type	6.57	1.30	33.33	0.023
Chiang_Proliferation [22]	Macrovascular invasion	2.44	0.50	11.97	0.270
Chiang_Proliferation [22]	Mosaic appearance	5.33	0.59	48.30	0.136
Chiang_Proliferation [22]	Internal arteries	4.42	0.48	40.56	0.189
Chiang_Proliferation [22]	Capsule	0.63	0.16	2.43	0.497
Chiang_Proliferation [22]	Extranodular growth	1.54	0.42	5.68	0.521
Villanueva_KRT19 [6]	Multiple HCCs	3.17	0.79	12.75	0.105
Villanueva_KRT19 [6]	Size ≥ 5cm	4.44	1.08	18.36	0.039
Villanueva_KRT19 [6]	Necrosis	2.13	0.56	8.14	0.271
Villanueva_KRT19 [6]	Wash-in/wash-out	2.82	0.51	15.72	0.236
Villanueva_KRT19 [6]	Hypovascular	0.89	0.07	10.72	0.923
Villanueva_KRT19 [6]	Wash-in/no wash-out	0.24	0.03	2.27	0.215
Villanueva_KRT19 [6]	Infiltrative type	11.50	1.93	68.52	0.007
Villanueva_KRT19 [6]	Macrovascular invasion	4.07	0.80	20.75	0.091
Villanueva_KRT19 [6]	Mosaic appearance	6.12	0.68	55.25	0.107
Villanueva_KRT19 [6]	Internal arteries	5.06	0.55	46.24	0.151
Villanueva_KRT19 [6]	Capsule	0.81	0.22	3.03	0.757
Villanueva_KRT19 [6]	Extranodular growth	1.77	0.47	6.62	0.399
Villanueva_KRT19 [6]	Enhancement ratio AP	0.978	0.953	1.003	0.088
Villanueva_KRT19 [6]	Enhancement ratio PVP	0.911	0.844	0.983	0.017
Villanueva_KRT19 [6]	Wash-out ratio	0.996	0.976	1.017	0.696
Villanueva_KRT19 [6]	Tumour-to-liver contrast ratio AP	0.032	0	67.341	0.378
Villanueva_KRT19 [6]	Tumour-to-liver contrast ratio PVP	98859.348	1.476	6620332720	0.042
Coulouarn_TGF-beta [28]	Wash-in/no wash-out	0.59	0.10	3.49	0.556
Coulouarn_TGF-beta [28]	Infiltrative type	9.63	1.64	56.37	0.012
Coulouarn_TGF-beta [28]	Macrovascular invasion	3.50	0.69	17.64	0.129

Coulouarn_TGF-beta [28]	Mosaic appearance	7.00	0.78	63.12	0.083
Coulouarn_TGF-beta [28]	Internal arteries	5.77	0.63	52.63	0.121
Coulouarn_TGF-beta [28]	Capsule	1.03	0.28	3.77	0.959
Coulouarn_TGF-beta [28]	Extranodular growth	2.09	0.51	8.52	0.303
Coulouarn_TGF-beta [28]	Enhancement ratio AP	0.976	0.952	1.001	0.062
Coulouarn_TGF-beta [28]	Enhancement ratio PVP	0.904	0.834	0.98	0.014
Coulouarn_TGF-beta [28]	Wash-out ratio	0.996	0.976	1.017	0.728
Coulouarn_TGF-beta [28]	Tumour-to-liver contrast ratio AP	0.011	0	22.171	0.246
Coulouarn_TGF-beta [28]	Tumour-to-liver contrast ratio PVP	125408.668	1.153	13635520340	0.047
Hoshida_S1/S2 [12]	Wash-in/no wash-out	0.96	0.19	5.03	0.966
Hoshida_S1/S2 [12]	Infiltrative type	7.00	1.22	40.09	0.029
Hoshida_S1/S2 [12]	Macrovascular invasion	1.39	0.29	6.58	0.682
Hoshida_S1/S2 [12]	Mosaic appearance	3.50	0.62	19.68	0.155
Hoshida_S1/S2 [12]	Internal arteries	2.81	0.49	16.16	0.246
Hoshida_S1/S2 [12]	Capsule	0.70	0.20	2.51	0.584
Hoshida_S1/S2 [12]	Extranodular growth	1.34	0.38	4.67	0.648
Hoshida_S1/S2 [12]	Enhancement ratio AP	0.977	0.954	1.001	0.061
Hoshida_S1/S2 [12]	Enhancement ratio PVP	0.973	0.932	1.016	0.21
Hoshida_S1/S2 [12]	Wash-out ratio	0.988	0.967	1.01	0.291
Hoshida_S1/S2 [12]	Tumour-to-liver contrast ratio AP	0.006	0	10.399	0.177
Hoshida_S1/S2 [12]	Tumour-to-liver contrast ratio PVP	2996120.063	2.937	3.05691E+12	0.035
Hoshida_S1 [12]	Wash-in/no wash-out	0.00	0.00	Inf	0.994
Hoshida_S1 [12]	Infiltrative type	4.11	0.86	19.61	0.077
Hoshida_S1 [12]	Macrovascular invasion	2.88	0.58	14.28	0.196
Hoshida_S1 [12]	Mosaic appearance	1.75	0.31	10.02	0.530
Hoshida_S1 [12]	Internal arteries	1.43	0.24	8.38	0.693
Hoshida_S1 [12]	Capsule	0.27	0.06	1.21	0.086
Hoshida_S1 [12]	Extranodular growth	1.12	0.23	5.40	0.889
Hoshida_S1 [12]	Enhancement ratio AP	0.983	0.96	1.007	0.172
Hoshida_S1 [12]	Enhancement ratio PVP	0.931	0.872	0.993	0.03
Hoshida_S1 [12]	Wash-out ratio	0.998	0.977	1.019	0.821
Hoshida_S1 [12]	Tumour-to-liver contrast ratio AP	0.049	0	111.726	0.444
Hoshida_S1 [12]	Tumour-to-liver contrast ratio PVP	2124.397	0.139	32381231.93	0.119
Hoshida_S2 [12]	Wash-in/no wash-out	11.25	1.42	89.26	0.022
Hoshida_S2 [12]	Infiltrative type	2.57	0.36	18.49	0.348
Hoshida_S2 [12]	Macrovascular invasion	0.00	0.00	Inf	0.994
Hoshida_S2 [12]	Mosaic appearance	23129758.62	0.00	Inf	0.994
Hoshida_S2 [12]	Internal arteries	22240152.46	0.00	Inf	0.994
Hoshida_S2 [12]	Capsule	5.71	0.58	56.72	0.137
Hoshida_S2 [12]	Extranodular growth	1.34	0.34	5.28	0.680
Hoshida_S2 [12]	Enhancement ratio AP	0.983	0.95	1.017	0.327
Hoshida_S2 [12]	Enhancement ratio PVP	1.028	0.982	1.076	0.242
Hoshida_S2 [12]	Wash-out ratio	0.985	0.961	1.01	0.23
Hoshida_S2 [12]	Tumour-to-liver contrast ratio AP	0.002	0	691.326	0.344
Hoshida_S2 [12]	Tumour-to-liver contrast ratio PVP	843.366	0.018	38922074.41	0.219
Lee_Poor survival [49]	Wash-in/no wash-out	0.59	0.10	3.49	0.556
Lee_Poor survival [49]	Infiltrative type	4.67	0.95	22.90	0.058
Lee_Poor survival [49]	Macrovascular invasion	1.82	0.38	8.73	0.455
Lee_Poor survival [49]	Mosaic appearance	7.00	0.78	63.12	0.083
Lee_Poor survival [49]	Internal arteries	5.77	0.63	52.63	0.121
Lee_Poor survival [49]	Capsule	0.67	0.18	2.46	0.543
Lee_Poor survival [49]	Extranodular growth	1.77	0.47	6.62	0.399
Lee_Poor survival [49]	Enhancement ratio AP	0.976	0.951	1.001	0.062
Lee_Poor survival [49]	Enhancement ratio PVP	0.932	0.875	0.993	0.03
Lee_Poor survival [49]	Wash-out ratio	0.996	0.976	1.017	0.706
Lee_Poor survival [49]	Tumour-to-liver contrast ratio AP	0.014	0	31.131	0.279
Lee_Poor survival [49]	Tumour-to-liver contrast ratio PVP	3096.142	0.156	61372405.11	0.111
Novak_Met [50]	Wash-in/no wash-out	0.00	0.00	Inf	0.994
Novak_Met [50]	Infiltrative type	4.00	0.79	20.38	0.095
Novak_Met [50]	Macrovascular invasion	5.20	0.97	28.02	0.055
Novak_Met [50]	Mosaic appearance	49563768.37	0.00	Inf	0.993
Novak_Met [50]	Internal arteries	2.44	0.26	22.97	0.437
Novak_Met [50]	Capsule	0.50	0.11	2.38	0.384
Novak_Met [50]	Extranodular growth	1.98	0.46	8.52	0.357
Novak_Met [50]	Enhancement ratio AP	0.989	0.965	1.014	0.385
Novak_Met [50]	Enhancement ratio PVP	0.936	0.878	0.998	0.043
Novak_Met [50]	Wash-out ratio	1.012	0.984	1.041	0.408
Novak_Met [50]	Tumour-to-liver contrast ratio AP	0.015	0	123.874	0.363
Novak_Met [50]	Tumour-to-liver contrast ratio PVP	2426.996	0.148	39832599.32	0.115
Minguez_Vascular invasion [9]	Wash-in/no wash-out	0.45	0.08	2.69	0.384

Minguez_Vascular invasion [9]	Infiltrative type	7.00	1.22	40.09	0.029
Minguez_Vascular invasion [9]	Macrovascular invasion	2.64	0.53	13.12	0.236
Minguez_Vascular invasion [9]	Mosaic appearance	3.50	0.62	19.68	0.155
Minguez_Vascular invasion [9]	Internal arteries	2.81	0.49	16.16	0.246
Minguez_Vascular invasion [9]	Capsule	0.70	0.20	2.51	0.584
Minguez_Vascular invasion [9]	Extranodular growth	1.34	0.38	4.67	0.648
Minguez_Vascular invasion [9]	Enhancement ratio AP	0.988	0.967	1.008	0.234
Minguez_Vascular invasion [9]	Enhancement ratio PVP	0.942	0.889	0.999	0.045
Minguez_Vascular invasion [9]	Wash-out ratio	0.993	0.973	1.014	0.508
Minguez_Vascular invasion [9]	Tumour-to-liver contrast ratio AP	0.194	0	195.874	0.642
Minguez_Vascular invasion [9]	Tumour-to-liver contrast ratio PVP	581.931	0.04	8552864.618	0.193
Woo_Cholangiocarcinoma_like [26]	Wash-in/no wash-out	0.45	0.08	2.69	0.384
Woo_Cholangiocarcinoma_like [26]	Infiltrative type	7.00	1.22	40.09	0.029
Woo_Cholangiocarcinoma_like [26]	Macrovascular invasion	1.39	0.29	6.58	0.682
Woo_Cholangiocarcinoma_like [26]	Mosaic appearance	1.75	0.37	8.33	0.482
Woo_Cholangiocarcinoma_like [26]	Internal arteries	2.81	0.49	16.16	0.246
Woo_Cholangiocarcinoma_like [26]	Capsule	0.46	0.12	1.67	0.235
Woo_Cholangiocarcinoma_like [26]	Extranodular growth	1.77	0.47	6.62	0.399
Woo_Cholangiocarcinoma_like [26]	Enhancement ratio AP	0.972	0.946	0.998	0.037
Woo_Cholangiocarcinoma_like [26]	Enhancement ratio PVP	0.919	0.855	0.986	0.019
Woo_Cholangiocarcinoma_like [26]	Wash-out ratio	0.997	0.977	1.017	0.742
Woo_Cholangiocarcinoma_like [26]	Tumour-to-liver contrast ratio AP	0.001	0	4.15	0.106
Woo_Cholangiocarcinoma_like [26]	Tumour-to-liver contrast ratio PVP	9408.632	0.232	381304326.4	0.091
Woo_recurrence [51]	Wash-in/no wash-out	0.28	0.03	2.60	0.261
Woo_recurrence [51]	Infiltrative type	3.44	0.73	16.10	0.117
Woo_recurrence [51]	Macrovascular invasion	2.44	0.50	11.97	0.270
Woo_recurrence [51]	Mosaic appearance	1.00	0.21	4.86	1.000
Woo_recurrence [51]	Internal arteries	1.65	0.28	9.60	0.577
Woo_recurrence [51]	Capsule	0.38	0.09	1.56	0.179
Woo_recurrence [51]	Extranodular growth	1.34	0.34	5.28	0.680
Woo_recurrence [51]	Enhancement ratio AP	0.98	0.956	1.005	0.121
Woo_recurrence [51]	Enhancement ratio PVP	0.891	0.814	0.975	0.012
Woo_recurrence [51]	Wash-out ratio	0.998	0.977	1.019	0.857
Woo_recurrence [51]	Tumour-to-liver contrast ratio AP	0.127	0	232.799	0.59
Woo_recurrence [51]	Tumour-to-liver contrast ratio PVP	696046.308	4.91	98670478316	0.026
Yamashita_EpCAM [48]	Wash-in/no wash-out	0.88	0.15	5.34	0.889
Yamashita_EpCAM [48]	Infiltrative type	2.20	0.47	10.30	0.317
Yamashita_EpCAM [48]	Macrovascular invasion	2.88	0.58	14.28	0.196
Yamashita_EpCAM [48]	Mosaic appearance	77099195.25	0.00	Inf	0.993
Yamashita_EpCAM [48]	Internal arteries	3.85	0.42	35.47	0.234
Yamashita_EpCAM [48]	Capsule	1.25	0.32	4.88	0.748
Yamashita_EpCAM [48]	Extranodular growth	1.15	0.32	4.11	0.826
Yamashita_EpCAM [48]	Enhancement ratio AP	0.968	0.939	0.999	0.046
Yamashita_EpCAM [48]	Enhancement ratio PVP	0.999	0.961	1.038	0.966
Yamashita_EpCAM [48]	Wash-out ratio	0.976	0.952	1.001	0.056
Yamashita_EpCAM [48]	Tumour-to-liver contrast ratio AP	0.006	0	33.768	0.245
Yamashita_EpCAM [48]	Tumour-to-liver contrast ratio PVP	1174.133	0.09	15352383.59	0.144

AP: arterial phase, PVP: portal venous phase, Inf: infinite

Supplementary Table 2: Association between genomic and pathology variables (univariate logistic regression analysis)

Genomic variable	Pathology variable	Odds Ratio	95%CI_low	95%CI_high	*P* value
Andersen_KRT19 [27]	Poorly differentiated	9.90	2.18	44.98	0.003
Andersen_KRT19 [27]	Microvascular invasion	115648793.00	0.00	Inf	0.994
Andersen_KRT19 [27]	Size ≥ 5cm	8.25	1.90	35.91	0.005
Andersen_KRT19 [27]	Fibrosis stage 4	0.46	0.11	1.83	0.269
Boyault_G3 [25]	Poorly differentiated	4.71	1.18	18.86	0.028
Boyault_G3 [25]	Microvascular invasion	9.15	1.00	83.97	0.050
Boyault_G3 [25]	Size ≥ 5cm	3.93	1.03	15.00	0.045
Boyault_G3 [25]	Fibrosis stage 4	0.54	0.14	2.06	0.366
Cairo_Hepatoblastoma [47]	Poorly differentiated	16.33	1.75	152.80	0.014
Cairo_Hepatoblastoma [47]	Microvascular invasion	42054106.54	0.00	Inf	0.994
Cairo_Hepatoblastoma [47]	Size ≥ 5cm	5.46	0.94	31.75	0.059
Cairo_Hepatoblastoma [47]	Fibrosis stage 4	0.46	0.09	2.45	0.361
Chiang_Proliferation [22]	Poorly differentiated	10.56	2.17	51.42	0.004
Chiang_Proliferation [22]	Microvascular invasion	88437312.29	0.00	Inf	0.994
Chiang_Proliferation [22]	Size ≥ 5cm	5.06	1.20	21.42	0.028
Chiang_Proliferation [22]	Fibrosis stage 4	0.47	0.11	1.98	0.303
Villanueva_KRT19 [6]	Poorly differentiated	13.93	2.78	69.88	0.001
Villanueva_KRT19 [6]	Microvascular invasion	101192693.90	0.00	Inf	0.994
Villanueva_KRT19 [6]	Size ≥ 5cm	6.43	1.51	27.45	0.012
Villanueva_KRT19 [6]	Fibrosis stage 4	0.36	0.09	1.49	0.157
Coulouarn_TGF-beta [28]	Poorly differentiated	9.90	2.18	44.98	0.003
Coulouarn_TGF-beta [28]	Microvascular invasion	2.29	0.40	13.28	0.354
Coulouarn_TGF-beta [28]	Size ≥ 5cm	8.25	1.90	35.91	0.005
Coulouarn_TGF-beta [28]	Fibrosis stage 4	0.46	0.11	1.83	0.269
Hoshida_S1/S2 [12]	Poorly differentiated	10.20	2.26	46.09	0.003
Hoshida_S1/S2 [12]	Microvascular invasion	3.00	0.52	17.32	0.219
Hoshida_S1/S2 [12]	Size ≥ 5cm	3.06	0.82	11.44	0.096
Hoshida_S1/S2 [12]	Fibrosis stage 4	0.70	0.18	2.70	0.608
Hoshida_S1 [12]	Poorly differentiated	4.50	1.04	19.39	0.044
Hoshida_S1 [12]	Microvascular invasion	1.50	0.26	8.82	0.654
Hoshida_S1 [12]	Size ≥ 5cm	1.46	0.37	5.71	0.591
Hoshida_S1 [12]	Fibrosis stage 4	1.00	0.25	4.08	1.000
Hoshida_S2 [12]	Poorly differentiated	7.00	0.70	70.04	0.098
Hoshida_S2 [12]	Microvascular invasion	23129758.60	0.00	Inf	0.994
Hoshida_S2 [12]	Size ≥ 5cm	6.46	0.65	64.30	0.111
Hoshida_S2 [12]	Fibrosis stage 4	0.33	0.03	3.96	0.378
Lee_Poor survival [49]	Poorly differentiated	5.67	1.37	23.46	0.017
Lee_Poor survival [49]	Microvascular invasion	6.13	0.67	56.10	0.109
Lee_Poor survival [49]	Size ≥ 5cm	4.86	1.21	19.47	0.026
Lee_Poor survival [49]	Fibrosis stage 4	0.46	0.11	1.83	0.269
Novak_Met [50]	Poorly differentiated	21.00	2.25	195.79	0.008
Novak_Met [50]	Microvascular invasion	49563768.43	0.00	Inf	0.994
Novak_Met [50]	Size ≥ 5cm	3.46	0.72	16.64	0.122
Novak_Met [50]	Fibrosis stage 4	1.25	0.25	6.29	0.787
Minguez_Vascular invasion [9]	Poorly differentiated	5.87	1.43	24.11	0.014
Minguez_Vascular invasion [9]	Microvascular invasion	8.00	0.87	73.27	0.066
Minguez_Vascular invasion [9]	Size ≥ 5cm	3.06	0.82	11.44	0.096
Minguez_Vascular invasion [9]	Fibrosis stage 4	1.13	0.29	4.33	0.864
Woo_Cholangiocarcinoma_like [26]	Poorly differentiated	5.87	1.43	24.11	0.014
Woo_Cholangiocarcinoma_like [26]	Microvascular invasion	3.00	0.52	17.32	0.219
Woo_Cholangiocarcinoma_like [26]	Size ≥ 5cm	3.06	0.82	11.44	0.096
Woo_Cholangiocarcinoma_like [26]	Fibrosis stage 4	0.70	0.18	2.70	0.608
Woo_recurrence [51]	Poorly differentiated	3.40	0.84	13.76	0.086
Woo_recurrence [51]	Microvascular invasion	1.74	0.30	10.14	0.540
Woo_recurrence [51]	Size ≥ 5cm	1.87	0.49	7.18	0.364
Woo_recurrence [51]	Fibrosis stage 4	0.46	0.11	1.83	0.269
Yamashita_EpCAM [48]	Poorly differentiated	4.50	1.04	19.39	0.044
Yamashita_EpCAM [48]	Microvascular invasion	4.05	0.44	37.43	0.217
Yamashita_EpCAM [48]	Size ≥ 5cm	2.38	0.59	9.54	0.221
Yamashita_EpCAM [48]	Fibrosis stage 4	0.63	0.14	2.72	0.531

Supplementary Table 3: Association between genomic variable and staging (univariate logistic regression analysis)

Genomic variable	Staging	Odds Ratio	95%CI_low	95%CI_high	*P* value
Andersen_KRT19 [27]	BCLC (0/A vs. B/C/D)	4.11	1	16.99	0.051
Andersen_KRT19 [27]	AJCC (T1/2 vs. T3/4)	6.75	1.51	30.16	0.012
Boyault_G3 [25]	BCLC (0/A vs. B/C/D)	7.08	1.52	33.03	0.013
Boyault_G3 [25]	AJCC (T1/2 vs. T3/4)	13.36	2.33	76.48	0.004
Cairo_Hepatoblastoma [47]	BCLC (0/A vs. B/C/D)	4.58	0.89	23.73	0.07
Cairo_Hepatoblastoma [47]	AJCC (T1/2 vs. T3/4)	4.38	0.84	22.71	0.079
Chiang_Proliferation [22]	BCLC (0/A vs. B/C/D)	3.69	0.89	15.37	0.072
Chiang_Proliferation [22]	AJCC (T1/2 vs. T3/4)	3.5	0.84	14.61	0.086
Villanueva_KRT19 [6]	BCLC (0/A vs. B/C/D)	5.07	1.19	21.51	0.028
Villanueva_KRT19 [6]	AJCC (T1/2 vs. T3/4)	4.8	1.13	20.46	0.034
Coulouarn_TGF-beta [28]	BCLC (0/A vs. B/C/D)	4.11	1	16.99	0.051
Coulouarn_TGF-beta [28]	AJCC (T1/2 vs. T3/4)	6.75	1.51	30.16	0.012
Hoshida_S1/S2 [12]	BCLC (0/A vs. B/C/D)	1.75	0.45	6.77	0.417
Hoshida_S1/S2 [12]	AJCC (T1/2 vs. T3/4)	2.67	0.66	10.7	0.167
Hoshida_S1 [12]	BCLC (0/A vs. B/C/D)	1.61	0.39	6.64	0.512
Hoshida_S1 [12]	AJCC (T1/2 vs. T3/4)	1.52	0.37	6.3	0.565
Hoshida_S2 [12]	BCLC (0/A vs. B/C/D)	1.33	0.19	9.19	0.77
Hoshida_S2 [12]	AJCC (T1/2 vs. T3/4)	3.3	0.48	22.94	0.228
Lee_Poor survival [49]	BCLC (0/A vs. B/C/D)	2.48	0.63	9.82	0.196
Lee_Poor survival [49]	AJCC (T1/2 vs. T3/4)	3.89	0.94	16.12	0.061
Novak_Met [50]	BCLC (0/A vs. B/C/D)	6.29	1.24	31.96	0.027
Novak_Met [50]	AJCC (T1/2 vs. T3/4)	6	1.18	30.58	0.031
Minguez_Vascular invasion [9]	BCLC (0/A vs. B/C/D)	2.84	0.71	11.35	0.139
Minguez_Vascular invasion [9]	AJCC (T1/2 vs. T3/4)	4.5	1.05	19.22	0.042
Woo_Cholangiocarcinoma_like [26]	BCLC (0/A vs. B/C/D)	1.75	0.45	6.77	0.417
Woo_Cholangiocarcinoma_like [26]	AJCC (T1/2 vs. T3/4)	2.67	0.66	10.7	0.167
Woo_recurrence [51]	BCLC (0/A vs. B/C/D)	2.2	0.55	8.91	0.267
Woo_recurrence [51]	AJCC (T1/2 vs. T3/4)	2.08	0.51	8.45	0.305
Yamashita_EpCAM [48]	BCLC (0/A vs. B/C/D)	1.61	0.39	6.64	0.512
Yamashita_EpCAM [48]	AJCC (T1/2 vs. T3/4)	2.57	0.62	10.74	0.195

AJCC: American Joint Committee on Cancer; BCLC: Barcelona Clinic Liver Cancer