

Table S5. mrHCC Clusters vs TCGA Features

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Numbers in tables are percent of feature in each mrHCC cluster

### Molecular Subtyping

RPPA clusters (Rehan Akbani)

Chi-square test p-value: 2.917717e-06

Bonferroni adjusted p-value: 0.0002363351

	mrHCC1	mrHCC2	mrHCC3
1	59.09	29.49	72.41
2	40.91	70.51	27.59

miRNA clusters (5 group NMF, Robertson group)

Chi-square test p-value: 2.606704e-07

Bonferroni adjusted p-value: 2.11143e-05

	mrHCC1	mrHCC2	mrHCC3
#N/A	0.00	2.94	1.52
1	8.33	24.51	13.64
2	25.00	35.29	4.55
3	50.00	16.67	36.36
4	0.00	2.94	21.21
5	16.67	17.65	22.73

Hypermethylation Cluster (Laird group)

Chi-square test p-value: 1.224833e-09

Bonferroni adjusted p-value: 9.921146e-08

	mrHCC1	mrHCC2	mrHCC3
1	20.83	4.90	27.27
2	25.00	47.06	34.85
3	33.33	3.92	27.27

4 20.83 44.12 10.61

Hypomethylation Cluster (Laird group)  
Chi-square test p-value: 0.0001523342  
Bonferroni adjusted p-value: 0.01233907

	mrHCC1	mrHCC2	mrHCC3
1	41.67	20.59	46.97
2	41.67	33.33	36.36
3	16.67	46.08	16.67

mRNA clusters (5 group NMF, Hoadley group)  
Chi-square test p-value: 2.772859e-22  
Bonferroni adjusted p-value: 2.246016e-20

	mrHCC1	mrHCC2	mrHCC3
1	34.78	2.97	75.76
2	13.04	0.99	1.52
3	21.74	21.78	9.09
4	8.70	49.50	1.52
5	21.74	24.75	12.12

DNA copy clusters, version 2 (Cherniak group)  
Chi-square test p-value: 0.0003038352  
Bonferroni adjusted p-value: 0.02461065

	mrHCC1	mrHCC2	mrHCC3
1	36.36	30.69	18.75
2	18.18	39.60	48.44
3	45.45	13.86	29.69
4	0.00	15.84	3.12

CDKN2A silencing (Toshinori Hinoue)  
Chi-square test p-value: 0.1332147  
Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
0	34.78	43.56	56.06
1	65.22	56.44	43.94

Paradigm clusters (k=4, Kiley Graim)  
Chi-square test p-value: 1.643718e-16  
Bonferroni adjusted p-value: 1.331412e-14

	mrHCC1	mrHCC2	mrHCC3
Paradigm:C1	9.09	34.00	12.50
Paradigm:C2	27.27	23.00	20.31
Paradigm:C3	13.64	6.00	65.62
Paradigm:C4	50.00	37.00	1.56

iCluster clusters (k=3, Ronglai Shen)  
 Chi-square test p-value: 6.378108e-09  
 Bonferroni adjusted p-value: 5.166268e-07

	mrHCC1	mrHCC2	mrHCC3
iCluster:1	54.55	13.40	61.90
iCluster:2	18.18	42.27	15.87
iCluster:3	27.27	44.33	22.22

## Clinical Data

Status

Chi-square test p-value: 0.1138658  
 Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
Alive	37.50	55.88	42.42
Dead	62.50	44.12	57.58

time\_of\_follow-up

Kruskal-Wallis test p-value: 0.0466021  
 Bonferroni adjusted p-value: 1

race

Chi-square test p-value: 0.02298358  
 Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	8.33	0.98	0.00
[Not Evaluated]	0.00	1.96	0.00
[Unknown]	4.17	1.96	0.00
AMERICAN INDIAN OR ALASKA NATIVE	0.00	0.98	1.52
ASIAN	37.50	18.63	40.91
BLACK OR AFRICAN AMERICAN	4.17	7.84	7.58
WHITE	45.83	67.65	50.00

gender

Chi-square test p-value: 0.08767365  
 Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
FEMALE	33.33	27.45	43.94
MALE	66.67	72.55	56.06

age\_at\_initial\_pathologic\_diagnosis

Kruskal-Wallis test p-value: 0.001087563  
 Bonferroni adjusted p-value: 0.08809258

neoplasm\_histologic\_grade

Chi-square test p-value: 0.0036417  
 Bonferroni adjusted p-value: 0.2949777

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	0.00	2.94	1.52
G1	8.33	26.47	7.58
G2	58.33	49.02	43.94
G3	33.33	21.57	46.97

residual\_tumor

Chi-square test p-value: 0.2111647

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	4.17	4.90	1.52
R0	79.17	84.31	80.30
R1	8.33	3.92	7.58
R2	4.17	0.00	0.00
RX	4.17	6.86	10.61

pathologic\_T

Chi-square test p-value: 0.2902317

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	0.00	0.98	0.00
T1	29.17	49.02	28.79
T2	29.17	19.61	31.82
T3	16.67	13.73	24.24
T3a	8.33	8.82	7.58
T3b	8.33	0.98	3.03
T4	8.33	5.88	4.55
TX	0.00	0.98	0.00

pathologic\_N

Chi-square test p-value: 0.1504892

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	0.00	0.00	1.52
N0	58.33	62.75	66.67
N1	0.00	0.00	4.55
NX	41.67	37.25	27.27

pathologic\_M

Chi-square test p-value: 0.04168974

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
M0	79.17	67.65	78.79
M1	8.33	0.98	1.52
MX	12.50	31.37	19.70

pathologic\_stage

Chi-square test p-value: 0.2454572

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	0.00	7.84	6.06
Stage I	29.17	48.04	25.76
Stage II	29.17	17.65	27.27
Stage III	0.00	1.96	1.52
Stage IIIA	25.00	19.61	27.27
Stage IIIB	4.17	1.96	4.55
Stage IIIC	4.17	1.96	4.55
Stage IV	4.17	0.00	1.52
Stage IVA	0.00	0.00	1.52
Stage IVB	4.17	0.98	0.00

Age>65

Chi-square test p-value: 0.02702547

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
No	58.33	51.96	72.73
Yes	41.67	48.04	27.27

BMI

Kruskal-Wallis test p-value: 0.05395187

Bonferroni adjusted p-value: 1

ObesityClass1

Chi-square test p-value: 0.09237375

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	4.17	12.75	16.67
#N/A	0.00	0.98	4.55
Normal	62.50	36.27	46.97
Obese	8.33	23.53	16.67
Overweight	25.00	26.47	15.15

ObesityClass2

Chi-square test p-value: 0.1322106

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	4.17	12.75	16.67
#N/A	0.00	0.98	4.55
Normal	87.50	62.75	62.12
Obese	8.33	23.53	16.67

Asian Race

Chi-square test p-value: 0.001486905

Bonferroni adjusted p-value: 0.1204393

	mrHCC1	mrHCC2	mrHCC3
0	12.50	4.90	0.00
Asian	37.50	18.63	40.91
Not Asian	50.00	76.47	59.09

Caucasian

Chi-square test p-value: 0.003826918

Bonferroni adjusted p-value: 0.3099803

	mrHCC1	mrHCC2	mrHCC3
0	12.50	4.90	0.00
Caucasian	45.83	67.65	50.00
Not Caucasian	41.67	27.45	50.00

person\_neoplasm\_cancer\_status

Chi-square test p-value: 0.6419603

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	8.33	2.94	4.55
[Unknown]	0.00	2.94	6.06
TUMOR FREE	66.67	65.69	57.58
WITH TUMOR	25.00	28.43	31.82

relative\_family\_cancer\_history\_ind\_3

Chi-square test p-value: 0.414096

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	4.17	3.92	6.06
[Unknown]	8.33	15.69	9.09
NO	54.17	40.20	56.06
YES	33.33	40.20	28.79

Family History

Chi-square test p-value: 0.3180356

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	12.50	19.61	15.15
No	54.17	40.20	56.06
Yes	33.33	40.20	28.79

history\_hepato\_carcinoma\_risk\_factor

Chi-square test p-value: 0.5731797

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2
[Not Available]	0.00	0.98
[Unknown]	0.00	0.00
Alcohol consumption	25.00	25.49
Alcohol consumption Hepatitis B	0.00	0.98
Alcohol consumption Hepatitis B Hepatitis C	0.00	0.98
Alcohol consumption Hepatitis B Hepatitis C Hemochromatosis	0.00	0.98
Alcohol consumption Hepatitis C	0.00	4.90
Alcohol consumption Non-Alcoholic Fatty Liver Disease	0.00	2.94
Alcohol consumption Other	4.17	0.98
Alpha-1 Antitrypsin Deficiency Other	0.00	0.98
Hemochromatosis	0.00	0.00
Hepatitis B	12.50	7.84
Hepatitis B Hepatitis C	0.00	0.98
Hepatitis B Other	0.00	0.00
Hepatitis C	8.33	15.69
Hepatitis C Other	0.00	0.00
No History of Primary Risk Factors	41.67	24.51
Non-Alcoholic Fatty Liver Disease	4.17	3.92
Non-Alcoholic Fatty Liver Disease Other	0.00	0.98
Other	4.17	6.86

	mrHCC3
[Not Available]	7.58
[Unknown]	3.03
Alcohol consumption	22.73
Alcohol consumption Hepatitis B	0.00
Alcohol consumption Hepatitis B Hepatitis C	0.00
Alcohol consumption Hepatitis B Hepatitis C Hemochromatosis	0.00
Alcohol consumption Hepatitis C	3.03
Alcohol consumption Non-Alcoholic Fatty Liver Disease	0.00
Alcohol consumption Other	1.52
Alpha-1 Antitrypsin Deficiency Other	0.00
Hemochromatosis	3.03
Hepatitis B	10.61
Hepatitis B Hepatitis C	0.00
Hepatitis B Other	1.52
Hepatitis C	9.09
Hepatitis C Other	1.52
No History of Primary Risk Factors	31.82
Non-Alcoholic Fatty Liver Disease	3.03
Non-Alcoholic Fatty Liver Disease Other	0.00
Other	1.52

Alcoholic liver disease

Chi-square test p-value: 0.02611458

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	4.17	0.98	12.12
Alcohol	29.17	37.25	27.27
No	66.67	61.76	60.61

Hepatitis C

Chi-square test p-value: 0.008433487

Bonferroni adjusted p-value: 0.6831124

	mrHCC1	mrHCC2	mrHCC3
---	4.17	0.98	12.12
Hepatitis C	8.33	23.53	13.64
No	87.50	75.49	74.24

Hepatitis B

Chi-square test p-value: 0.03630778

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	4.17	0.98	12.12
Hepatitis B	12.50	11.76	12.12
No	83.33	87.25	75.76

NAFLD

Chi-square test p-value: 0.0174004

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	0.00	0.98	10.61
NAFLD	4.17	7.84	3.03
No	95.83	91.18	86.36

Type of macrovascular invasion

Chi-square test p-value: 0.03532173

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	16.67	14.71	22.73
Macrovascular Invasion	8.33	0.00	9.09
Microvascular	29.17	22.55	22.73
None	45.83	62.75	45.45

Vascular Invasion

Chi-square test p-value: 0.1794046

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	16.67	14.71	22.73
No	45.83	62.75	45.45
Yes	37.50	22.55	31.82

child\_pugh\_classification\_grade

Chi-square test p-value: 0.0340016



Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	8.33	17.65	31.82
[Unknown]	20.83	21.57	28.79
A	62.50	51.96	28.79
B	8.33	8.82	10.61

alpha\_fetoprotien\_at\_procurement

Kruskal-Wallis test p-value: 0.3052903

Bonferroni adjusted p-value: 1

AFP>300

Chi-square test p-value: 0.0003467845

Bonferroni adjusted p-value: 0.02808955

	mrHCC1	mrHCC2	mrHCC3
	0.00	0.00	0.00
No	63.16	90.54	60.98
Yes	36.84	9.46	39.02

liver\_fibrosis\_ishak\_score\_category

Chi-square test p-value: 0.02579391

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	16.67	13.73	36.36
[Unknown]	4.17	0.98	0.00
0 - No Fibrosis	54.17	37.25	28.79
1,2 - Portal Fibrosis	8.33	13.73	7.58
3,4 - Fibrous Speta	8.33	5.88	9.09
5 - Nodular Formation and Incomplete Cirrhosis	0.00	1.96	3.03
6 - Established Cirrhosis	8.33	26.47	15.15

Cirrhosis

Chi-square test p-value: 0.1126564

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
---	8.33	2.94	1.52
No	83.33	67.65	77.27
Yes	8.33	29.41	21.21

new\_tumor\_event\_after\_initial\_treatment

Chi-square test p-value: 0.1053778

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
[Not Available]	62.50	32.35	37.88
[Unknown]	0.00	0.98	6.06
NO	20.83	31.37	28.79
Yes	0.00	0.98	0.00

YES 16.67 34.31 27.27

## Hepatitis Calls

HBV\_consensus

Chi-square test p-value: 0.1571745

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
neg	75.00	82.35	69.70
pos	25.00	17.65	30.30

HCV\_consensus

Chi-square test p-value: 0.1089897

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
neg	91.67	76.47	86.36
pos	8.33	23.53	13.64

## Leukocyte Estimate

Leukocyte\_estimate

Kruskal-Wallis test p-value: 0.004087824

Bonferroni adjusted p-value: 0.3311137

## Purity/Ploidy

Purity

Kruskal-Wallis test p-value: 0.0003424982

Bonferroni adjusted p-value: 0.02774235

Ploidy

Kruskal-Wallis test p-value: 0.0005763198

Bonferroni adjusted p-value: 0.04668191

Genome\_Doublings

Chi-square test p-value: 1.528364e-05

Bonferroni adjusted p-value: 0.001237975

	mrHCC1	mrHCC2	mrHCC3
0	42.86	76.60	43.55
1	19.05	18.09	33.87
2	38.10	5.32	22.58

Cancer\_DNA\_fraction

Kruskal-Wallis test p-value: 0.02205458

Bonferroni adjusted p-value: 1

## Historic Gene Signature

### NCIP

Chi-square test p-value: 8.17942e-19

Bonferroni adjusted p-value: 6.62533e-17

	mrHCC1	mrHCC2	mrHCC3
A	54.17	5.88	72.73
B	45.83	94.12	27.27

### NCIHS

Chi-square test p-value: 5.895402e-07

Bonferroni adjusted p-value: 4.775276e-05

	mrHCC1	mrHCC2	mrHCC3
HC	91.67	96.08	66.67
HS	8.33	3.92	33.33

### NCIPHS

Chi-square test p-value: 1.893813e-18

Bonferroni adjusted p-value: 1.533989e-16

	mrHCC1	mrHCC2	mrHCC3
A	47.83	4.95	37.88
B	43.48	83.17	13.64
HS	8.70	11.88	48.48

### SNUR

Chi-square test p-value: 2.846825e-12

Bonferroni adjusted p-value: 2.305928e-10

	mrHCC1	mrHCC2	mrHCC3
High	33.33	15.69	71.21
Low	66.67	84.31	28.79

### HB16

Chi-square test p-value: 4.474791e-19

Bonferroni adjusted p-value: 3.624581e-17

	mrHCC1	mrHCC2	mrHCC3
C1	62.50	92.16	22.73
C2	37.50	7.84	77.27

### RS65

Chi-square test p-value: 2.368049e-15

Bonferroni adjusted p-value: 1.91812e-13

	mrHCC1	mrHCC2	mrHCC3
high	41.67	6.86	66.67

low 58.33 93.14 33.33

RS65.Score

Kruskal-Wallis test p-value: 1.187344e-20

Bonferroni adjusted p-value: 9.617487e-19

Hoshida

Chi-square test p-value: 1.384376e-21

Bonferroni adjusted p-value: 1.121345e-19

	mrHCC1	mrHCC2	mrHCC3
1	20.83	16.67	9.09
2	70.83	11.76	84.85
3	8.33	71.57	6.06

HIPPO

Chi-square test p-value: 1.585921e-06

Bonferroni adjusted p-value: 0.0001284596

	mrHCC1	mrHCC2	mrHCC3
AH	66.67	91.18	57.58
SOH	33.33	8.82	42.42

CC-like

Chi-square test p-value: 4.450136e-18

Bonferroni adjusted p-value: 3.60461e-16

	mrHCC1	mrHCC2	mrHCC3
CCL	33.33	2.94	66.67
HCC	66.67	97.06	33.33

IDH

Chi-square test p-value: 0.0981672

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
IDH mutant	4.17	0.00	4.55
WT	95.83	100.00	95.45

IDH\_P

Kruskal-Wallis test p-value: 1.309825e-08

Bonferroni adjusted p-value: 1.060958e-06

## TP53 / CTNNB1 / TERT

TP53\_mutation

Chi-square test p-value: 0.01301742

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
mut	26.09	23.23	44.62
wt	73.91	76.77	55.38

TP53 mutation signature (sum of expression of targets)  
 Kruskal-Wallis test p-value: 1.032032e-10  
 Bonferroni adjusted p-value: 8.359459e-09

CTNNB1\_mutation  
 Chi-square test p-value: 0.006422675  
 Bonferroni adjusted p-value: 0.5202367

	mrHCC1	mrHCC2	mrHCC3
mut	30.43	34.34	12.31
wt	69.57	65.66	87.69

TERT promoter mutation  
 Chi-square test p-value: 0.2431761  
 Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
mut	41.67	50.98	34.85
no	54.17	48.04	63.64
not assessed	4.17	0.98	1.52

TERT mRNA expression  
 Kruskal-Wallis test p-value: 0.4653658  
 Bonferroni adjusted p-value: 1

## Pathology Review

HCC subtypes  
 Chi-square test p-value: 0.005754126  
 Bonferroni adjusted p-value: 0.4660842

	mrHCC1	mrHCC2	mrHCC3
Cirrhotosimetic hepatocellular carcinoma	5.00	0.00	3.12
Clear cell hepatocellular carcinoma	0.00	8.42	4.69
Fibrolamellar carcinoma	0.00	0.00	6.25
Lymphocyte rich hepatocellular carcinoma	0.00	0.00	4.69
Myxoid hepatocellular carcinoma	0.00	1.05	0.00
No specific subtype	80.00	82.11	67.19
Sarcomatoid hepatocellular carcinoma	0.00	0.00	3.12
Scirrhous hepatocellular carcinoma	15.00	1.05	6.25
Steatohepatitic	0.00	7.37	4.69

Grade-predominant  
 Chi-square test p-value: 0.0008726526  
 Bonferroni adjusted p-value: 0.07068486

	mrHCC1	mrHCC2	mrHCC3
1	0.00	4.21	0.00
2	10.00	35.79	10.94
3	75.00	49.47	64.06
4	15.00	10.53	25.00

Grade-worst

Chi-square test p-value: 0.00263232

Bonferroni adjusted p-value: 0.2132179

	mrHCC1	mrHCC2	mrHCC3
1	0.00	2.11	0.00
2	5.00	23.16	4.69
3	65.00	53.68	50.00
4	30.00	21.05	45.31

Clear Cell Change

Kruskal-Wallis test p-value: 0.8620273

Bonferroni adjusted p-value: 1

Intratumoral hyaline bodies

Kruskal-Wallis test p-value: 0.4482744

Bonferroni adjusted p-value: 1

Intratumoral Mallory hyaline bodies

Kruskal-Wallis test p-value: 0.1408251

Bonferroni adjusted p-value: 1

Macrovesicular steatosis

Kruskal-Wallis test p-value: 0.3084989

Bonferroni adjusted p-value: 1

Ballooned tumor cells

Chi-square test p-value: 0.2824133

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
No	85.00	75.79	82.81
Yes Few	10.00	11.58	14.06
Yes Many	5.00	12.63	3.12

Intratumoral inflammation

Chi-square test p-value: 0.29864

Bonferroni adjusted p-value: 1

	mrHCC1
None or minimal	80.00
Yes, lymphocytic Marked (on average, more inflammatory cells than tumor)	0.00
Yes, lymphocytic Mild	15.00
Yes, lymphocytic Moderate	5.00
Yes, neutrophilic Mild	0.00
	mrHCC2
None or minimal	84.21
Yes, lymphocytic Marked (on average, more inflammatory cells than tumor)	0.00
Yes, lymphocytic Mild	14.74

Yes, lymphocytic Moderate	1.05
Yes, neutrophilic Mild	0.00

	mrHCC3
None or minimal	71.88
Yes, lymphocytic Marked (on average, more inflammatory cells than tumor)	3.12
Yes, lymphocytic Mild	17.19
Yes, lymphocytic Moderate	6.25
Yes, neutrophilic Mild	1.56

Cholestasis

Chi-square test p-value: 0.5459086

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
No	65.00	70.53	79.69
Yes Mild (less than 5% of tumor area)	25.00	24.21	17.19
Yes Moderate (6-50% of tumor area)	10.00	5.26	3.12

Intratatumoral fibrosis

Chi-square test p-value: 0.04370329

Bonferroni adjusted p-value: 1

	mrHCC1
None or minimal	70.00
Yes Marked (fibrosis is equal to or greater than the amount of tumor cells)	5.00
Yes Mild (intratumoral fibrosis less than 5-25% of surface area)	10.00
Yes Moderate (intratumoral fibrosis 26- 49% of surface area)	15.00

	mrHCC2
None or minimal	84.21
Yes Marked (fibrosis is equal to or greater than the amount of tumor cells)	0.00
Yes Mild (intratumoral fibrosis less than 5-25% of surface area)	12.63
Yes Moderate (intratumoral fibrosis 26- 49% of surface area)	3.16

	mrHCC3
None or minimal	67.19
Yes Marked (fibrosis is equal to or greater than the amount of tumor cells)	1.56
Yes Mild (intratumoral fibrosis less than 5-25% of surface area)	23.44
Yes Moderate (intratumoral fibrosis 26- 49% of surface area)	7.81

Growth pattern-major

Chi-square test p-value: 0.0001915865

Bonferroni adjusted p-value: 0.0155185

	mrHCC1	mrHCC2	mrHCC3
Macrotrabecular	40.00	3.16	10.94
Pseudoacinar	10.00	9.47	6.25
Solid	20.00	44.21	45.31
Trabecular	30.00	43.16	37.50

Growth pattern-other

Chi-square test p-value: 0.3760001

Bonferroni adjusted p-value: 1

	mrHCC1	mrHCC2	mrHCC3
Macrotrabecular	0.00	1.05	1.56
Macrotrabecular Solid	0.00	0.00	3.12
Macrotrabecular Trabecular	0.00	0.00	1.56
NULL	5.00	13.68	14.06
Pseudoacinar	5.00	7.37	1.56
Pseudoacinar Macrotrabecular	0.00	2.11	1.56
Pseudoacinar Macrotrabecular Solid	0.00	0.00	1.56
Pseudoacinar Solid	5.00	1.05	4.69
Pseudoacinar Solid Macrotrabecular	0.00	1.05	0.00
Pseudoacinar Trabecular	10.00	8.42	6.25
Pseudoacinar Trabecular Macrotrabecular	0.00	0.00	3.12
Solid	15.00	16.84	12.50
Solid Macrotrabecular	0.00	3.16	4.69
Solid Macrotrabecular Pseudoacinar	0.00	3.16	0.00
Solid Pseudoacinar	5.00	7.37	6.25
Solid Pseudoacinar Trabecular	0.00	0.00	0.00
Solid Trabecular	10.00	3.16	4.69
Solid Trabecular Pseudoacinar	5.00	0.00	1.56
Trabecular	10.00	21.05	17.19
Trabecular Macrotrabecular	5.00	1.05	7.81
Trabecular Macrotrabecular Pseudoacinar	0.00	1.05	0.00
Trabecular Pseudoacinar	10.00	5.26	0.00
Trabecular Solid	15.00	3.16	6.25

Multimorphologies

Chi-square test p-value: 0.682271

Bonferroni adjusted p-value: 1

	mrHCC1
No	95.00
Yes - Clearly distinct nodules of HCC with different morphological patterns	5.00
	mrHCC2
No	88.42
Yes - Clearly distinct nodules of HCC with different morphological patterns	11.58
	mrHCC3
No	89.06
Yes - Clearly distinct nodules of HCC with different morphological patterns	10.94

mRNA Fusions

mRNA fusions

Chi-square test p-value: 0.5036021

Bonferroni adjusted p-value: 1



	mrHCC1	mrHCC2	mrHCC3
---	95.83	89.22	83.33
ARID1A-PRKCZ	0.00	0.98	0.00
CTSC-RAB38	0.00	0.00	3.03
DNAJB1/PRKACA	0.00	0.00	6.06
FGFR2-BICC1	0.00	0.00	1.52
LOC283587-TERT	0.00	0.98	0.00
PSPC-FGF14	4.17	0.00	0.00
PTK2-DENND3	0.00	0.98	0.00
SLC12A7-TERT	0.00	0.98	1.52
SLC7A2-TERT	0.00	0.98	0.00
STK38-TDRD7	0.00	0.98	0.00
STRN3-MAML3	0.00	0.00	1.52
TACC3-FGFR3; TCF7L2-RP11-202P11.1	0.00	0.98	0.00
TCF7L2-VTI1A	0.00	0.98	0.00
TCF7L2-VTI1A; EP300-RBX1	0.00	0.98	0.00
TFG-GPR128	0.00	0.00	1.52
XRCC5-ABCB4; RAD50-C5orf56	0.00	0.98	0.00
XRCC6-ACO2	0.00	0.98	1.52