Potential panel genes of hepatocellular\_carcinoma cancer are (n=50):

Asia:  
TP53 (39.0533%)  
CTNNB1 (36.0947%)  
PIK3CA (11.2426%)  
BRAF (9.4675%)  
KEAP1 (2.9586%)  
AXIN1 (1.7751%)  
KRAS (1.7751%)  
AR (1.7751%)  
KDR (1.1834%)  
NFE2L2 (1.1834%)  
MAP2K4 (1.1834%)  
FHIT (1.1834%)  
PTEN (1.1834%)  
ARID2 (1.1834%)  
TOP1 (1.1834%)  
EGFR (1.1834%)  
MYO5A (1.1834%)  
BARD1 (0.5917%)  
ACVR1B (0.5917%)  
FSTL3 (0.5917%)  
STK11 (0.5917%)  
PTPRB (0.5917%)  
LASP1 (0.5917%)  
DCTN1 (0.5917%)  
ERCC2 (0.5917%)  
DNMT3A (0.5917%)  
APC (0.5917%)  
PREX2 (0.5917%)  
CHD4 (0.5917%)  
SMARCA4 (0.5917%)  
KMT2A (0.5917%)  
FLT4 (0.5917%)  
ARHGAP26 (0.5917%)  
TET2 (0.5917%)  
GPC3 (0.5917%)  
COL2A1 (0.5917%)  
EXT1 (0.5917%)  
EPAS1 (0.5917%)  
HMGA2 (0.5917%)  
LMO1 (0.5917%)  
GRIN2A (0.5917%)  
STAT3 (0.5917%)  
MYH9 (0.5917%)  
KDM5C (0.5917%)  
KMT2C (0.5917%)  
SET (0.5917%)  
CNOT3 (0.5917%)  
IKZF1 (0.5917%)  
ZBTB16 (0.5917%)  
CAMTA1 (0.5917%)  
  
  
The world:  
TP53 (41.0932%)  
CTNNB1 (36.5492%)  
LRP1B (3.1939%)  
CAMTA1 (1.3829%)  
ARID1B (1.4817%)  
AXIN1 (6.7172%)  
PRDM16 (1.2183%)  
NCOR1 (0.9549%)  
ESR1 (0.6256%)  
ERBB4 (1.5147%)  
GAS7 (0.922%)  
PTPRT (1.4817%)  
AFF3 (0.7573%)  
ARID2 (3.5891%)  
PAX5 (0.5598%)  
JAK2 (0.6256%)  
ARID1A (3.8525%)  
AFDN (0.6256%)  
PREX2 (2.7988%)  
ZFHX3 (1.5147%)  
ARHGAP26 (0.6256%)  
MLLT3 (0.889%)  
FHIT (0.7903%)  
KMT2C (2.1403%)  
ABL1 (0.3622%)  
EBF1 (0.9549%)  
PTPRK (1.1854%)  
ALK (1.4817%)  
JAK1 (1.2183%)  
ZNF521 (1.5805%)  
NTRK3 (1.5147%)  
SYK (0.3951%)  
RABEP1 (0.2634%)  
ROS1 (0.9878%)  
PIK3CA (2.4366%)  
PIK3R1 (0.5268%)  
NCOR2 (1.2512%)  
PTPRB (1.7122%)  
TSC2 (2.272%)  
ITK (0.4281%)  
GRIN2A (1.2842%)  
FLT3 (0.5598%)  
MAP2K4 (0.3622%)  
NFE2L2 (1.8769%)  
NSD1 (0.8232%)  
GPHN (1.0537%)  
RNF213 (1.4488%)  
FAT4 (1.4159%)  
PDE4DIP (1.5805%)  
PTEN (1.7451%)  
ATM (1.6464%)  
SETD2 (1.6464%)  
FLT4 (1.2183%)  
APC (1.4817%)  
PTPN13 (1.4488%)  
KIT (1.2842%)  
CDH11 (1.2183%)  
HNF1A (1.1854%)  
RSPO3 (0.3293%)  
SND1 (1.3171%)  
RB1 (1.5805%)  
RAD51B (0.8232%)  
NFIB (0.4281%)  
KMT2D (1.6134%)  
GPC3 (0.9549%)  
LPP (0.7573%)  
FOXP1 (0.8232%)  
SMARCA4 (1.2512%)  
NF1 (1.4488%)  
SPEN (0.922%)  
CBFA2T3 (0.6585%)  
MAML2 (0.922%)  
CDKN2A (1.4159%)  
CUX1 (0.9878%)  
YWHAE (0.3951%)  
ATR (1.3171%)  
RUNX1T1 (0.9878%)  
RANBP2 (0.922%)  
EGFR (1.2842%)  
KMT2A (1.3171%)  
KEAP1 (1.2842%)  
CNTRL (0.7244%)  
POLQ (1.1195%)  
ERC1 (0.889%)  
CREBBP (1.3171%)  
NOTCH2 (0.889%)  
PTPRC (1.1195%)  
ERG (0.7244%)  
TRRAP (1.1195%)  
MSI2 (0.8232%)  
BRAF (1.1195%)  
UBR5 (0.922%)  
FAT1 (0.9878%)  
CARD11 (1.0537%)  
TSC1 (0.8561%)  
GNAS (0.7903%)  
AXIN2 (0.889%)  
CACNA1D (0.922%)  
TET1 (0.7903%)  
NPM1 (0.1646%)  
NOTCH1 (0.9549%)  
NCOA2 (0.8232%)  
IL6ST (0.889%)  
QKI (0.3622%)  
MYO5A (0.7573%)  
KAT6A (0.8232%)  
AFF1 (0.8232%)  
PBRM1 (0.922%)  
PBX1 (0.6915%)  
TERT (0.7573%)  
KDR (1.0537%)  
TPR (0.922%)  
NUP214 (0.8232%)  
EXT1 (0.6256%)  
GNAQ (0.4281%)  
ATRX (0.8561%)  
TCF12 (0.6256%)  
TP63 (0.7573%)  
BRCA2 (0.9549%)  
FANCC (0.2634%)  
FANCD2 (0.8561%)  
ARHGEF12 (0.889%)  
USP6 (0.5268%)  
KTN1 (0.7573%)  
POLE (0.7903%)  
MYH9 (0.7903%)  
MYH11 (0.7244%)  
KRAS (0.9549%)  
NUP98 (0.8232%)  
MTOR (0.9549%)  
PAX7 (0.4281%)  
TSHR (0.461%)  
SETBP1 (0.6915%)  
CDH1 (0.8561%)  
ASXL1 (0.8561%)  
EP300 (0.922%)  
GOPC (0.1317%)  
KAT6B (0.7903%)  
HIP1 (0.6256%)  
TBL1XR1 (0.7244%)  
ACVR2A (0.889%)  
TCF7L2 (0.6256%)  
CLIP1 (0.7244%)  
KDM6A (0.6585%)  
BAP1 (0.7573%)  
SMARCB1 (0.7573%)  
BMPR1A (0.5598%)  
FOXO3 (0.3951%)  
IKZF1 (0.8232%)  
RSPO2 (0.5598%)  
NFATC2 (0.5598%)  
FGFR1OP (0.3951%)  
SMAD3 (0.5268%)  
EML4 (0.5927%)  
BLM (0.7244%)  
CRTC1 (0.4939%)  
COL2A1 (0.7244%)  
CHEK2 (0.3622%)  
PDGFRA (0.7573%)  
NSD2 (0.7573%)  
FBXW7 (0.6256%)  
CLTC (0.7573%)  
BCORL1 (0.5268%)  
IRS4 (0.6256%)  
MITF (0.6585%)  
RUNX1 (0.6915%)  
COL1A1 (0.7244%)  
NRG1 (0.6256%)  
SLC34A2 (0.6585%)  
RAP1GDS1 (0.5268%)  
BCR (0.5268%)  
AR (0.7244%)  
CD274 (0.1317%)  
CLTCL1 (0.7573%)  
LRIG3 (0.5927%)  
FGFR4 (0.6585%)  
MECOM (0.7573%)  
PTCH1 (0.3622%)  
ARNT (0.4281%)  
IL21R (0.7244%)  
PRDM1 (0.4939%)  
POT1 (0.5927%)  
LZTR1 (0.4939%)  
MET (0.5927%)  
DICER1 (0.6915%)  
ARHGAP35 (0.6256%)  
DDX10 (0.3951%)  
MLLT10 (0.6256%)  
WT1 (0.6256%)  
BCL2 (0.3951%)  
CBLB (0.5598%)  
TET2 (0.7244%)  
PPFIBP1 (0.5268%)  
AKT2 (0.4939%)  
AMER1 (0.6915%)  
NF2 (0.5927%)  
HNRNPA2B1 (0.4281%)  
SDHB (0.1976%)  
BCL11A (0.5927%)  
LEF1 (0.4939%)  
MAP3K1 (0.461%)  
DNMT3A (0.5598%)  
PIK3CB (0.461%)  
DROSHA (0.5268%)  
BRCA1 (0.461%)  
WRN (0.5268%)  
GNA11 (0.3622%)  
IDH1 (0.6915%)  
PAX3 (0.6256%)  
NCOA1 (0.461%)  
STRN (0.4939%)  
ZNF331 (0.4939%)  
TMPRSS2 (0.4281%)  
MAPK1 (0.3293%)  
EPS15 (0.5268%)  
NIN (0.6256%)  
SMAD4 (0.5927%)  
KNL1 (0.5268%)  
MSH2 (0.4281%)  
BRIP1 (0.5927%)  
SMO (0.4939%)  
ATP2B3 (0.5927%)  
CRTC3 (0.4939%)  
ELL (0.3622%)  
HMGA2 (0.3622%)  
BCL9L (0.3951%)  
BCL11B (0.5598%)  
JAK3 (0.5927%)  
NSD3 (0.461%)  
TRIM33 (0.3951%)  
TNFAIP3 (0.2634%)  
ABL2 (0.461%)  
LIFR (0.5598%)  
CYLD (0.4281%)  
ZBTB16 (0.461%)  
BCL9 (0.4281%)  
FGFR2 (0.5598%)  
FOXO1 (0.3293%)  
FIP1L1 (0.4939%)  
STAG2 (0.5927%)  
NT5C2 (0.4281%)  
NTRK1 (0.4281%)  
ZMYM2 (0.5268%)  
MSH6 (0.5927%)  
ERCC2 (0.5927%)  
MED12 (0.5598%)  
SF3B1 (0.5927%)  
AFF4 (0.4281%)  
WIF1 (0.4281%)  
FANCA (0.5598%)  
KLK2 (0.2634%)  
DNM2 (0.4281%)  
XPO1 (0.4939%)  
MLLT1 (0.4281%)  
MRTFA (0.3622%)  
LATS1 (0.5598%)  
TRAF7 (0.4939%)  
NUMA1 (0.5268%)  
ETV6 (0.4281%)  
PPP6C (0.4281%)  
IDH2 (0.5268%)  
RET (0.5598%)  
BCOR (0.5268%)  
ERBB3 (0.5268%)  
TRIM24 (0.3622%)  
CDC73 (0.4281%)  
NRAS (0.5268%)  
POLD1 (0.461%)  
CCDC6 (0.4281%)  
SRC (0.3951%)  
PER1 (0.3293%)  
FLI1 (0.4939%)  
LCK (0.3951%)  
TRIP11 (0.4281%)  
RECQL4 (0.4939%)  
CDK12 (0.4939%)  
KDM5C (0.3622%)  
STIL (0.3951%)  
ATP1A1 (0.461%)  
PDCD1LG2 (0.2963%)  
CBL (0.461%)  
EXT2 (0.4281%)  
HLA-A (0.3951%)  
POU2AF1 (0.2634%)  
SUFU (0.3951%)  
DDX6 (0.3622%)  
PICALM (0.3622%)  
PLCG1 (0.461%)  
LATS2 (0.461%)  
USP8 (0.3951%)  
MN1 (0.3951%)  
TOP1 (0.4281%)  
NUTM1 (0.3951%)  
PCM1 (0.4281%)  
KCNJ5 (0.3622%)  
SH2B3 (0.3293%)  
PSIP1 (0.2963%)  
STK11 (0.3951%)  
ERCC4 (0.461%)  
TCF3 (0.3622%)  
CIC (0.4281%)  
RNF43 (0.4281%)  
ELF4 (0.3951%)  
ASPSCR1 (0.4281%)  
CTCF (0.4281%)  
ACSL3 (0.3293%)  
STAT3 (0.4281%)  
LASP1 (0.3293%)  
TPM4 (0.3951%)  
SMAD2 (0.4281%)  
IRF4 (0.3951%)  
PRRX1 (0.461%)  
SUZ12 (0.3622%)  
PRF1 (0.461%)  
EIF3E (0.3951%)  
FBXO11 (0.4281%)  
NR4A3 (0.3951%)  
FGFR3 (0.4281%)  
PTPN11 (0.3951%)  
BARD1 (0.3622%)  
MYB (0.4281%)  
MAP2K1 (0.4281%)  
CHD4 (0.4281%)  
CDK6 (0.2963%)  
ETV1 (0.2963%)  
KDM5A (0.3622%)  
BCL6 (0.3293%)  
TENT5C (0.3622%)  
IKBKB (0.3951%)  
PPARG (0.3622%)  
ABI1 (0.2305%)  
EWSR1 (0.3951%)  
RARA (0.3622%)  
MALT1 (0.3622%)  
ATIC (0.3622%)  
KIF5B (0.2634%)  
ERBB2 (0.3622%)  
CANT1 (0.3293%)  
DCTN1 (0.3622%)  
XPC (0.3293%)  
CASP8 (0.3622%)  
SLC45A3 (0.2963%)  
PDGFRB (0.3622%)  
SS18L1 (0.3293%)  
FGFR1 (0.3622%)  
TGFBR2 (0.3293%)  
HIF1A (0.3622%)  
PPM1D (0.3293%)  
BRD3 (0.3293%)  
SH3GL1 (0.2963%)  
MDM2 (0.3293%)  
PAX8 (0.3293%)  
TLX3 (0.2963%)  
TBX3 (0.3622%)  
BCL7A (0.2963%)  
SDHA (0.2963%)  
MAP3K13 (0.2634%)  
MEN1 (0.2963%)  
PMS2 (0.2305%)  
CCNB1IP1 (0.2305%)  
TFEB (0.2963%)  
RAF1 (0.3293%)  
PALB2 (0.2963%)  
IKZF3 (0.2634%)  
LMO2 (0.2963%)  
STAT5B (0.2963%)  
EPAS1 (0.2963%)  
SALL4 (0.2634%)  
BUB1B (0.2305%)  
PML (0.3293%)  
CCNE1 (0.1646%)  
EIF4A2 (0.3293%)  
BCL3 (0.1976%)  
ERCC5 (0.3293%)  
CALR (0.1976%)  
CDKN1B (0.1976%)  
FES (0.1646%)  
EZR (0.2634%)  
CIITA (0.2963%)  
OLIG2 (0.2963%)  
RPL22 (0.2963%)  
CREB3L2 (0.1976%)  
ACVR1 (0.2634%)  
PRKACA (0.2634%)  
ZRSR2 (0.2963%)  
ETNK1 (0.2634%)  
RHOH (0.2963%)  
CREB3L1 (0.2634%)  
SDC4 (0.1646%)  
PLAG1 (0.2305%)  
SPOP (0.2634%)  
FUBP1 (0.2963%)  
BRD4 (0.2963%)  
FCRL4 (0.2305%)  
HSP90AA1 (0.2963%)  
PPP2R1A (0.2963%)  
WAS (0.1976%)  
ETV5 (0.2634%)  
MUTYH (0.2634%)  
FLCN (0.2305%)  
TCEA1 (0.2305%)  
KDSR (0.2634%)  
BAX (0.2634%)  
MAP2K2 (0.2305%)  
DDR2 (0.2634%)  
ERCC3 (0.2634%)  
RAC1 (0.2634%)  
TFE3 (0.1976%)  
MLH1 (0.2634%)  
EZH2 (0.2634%)  
NDRG1 (0.2305%)  
ACVR1B (0.1976%)  
CSF3R (0.1317%)  
WWTR1 (0.1976%)  
RBM15 (0.1976%)  
ELK4 (0.1976%)  
TFG (0.1976%)  
MYCL (0.2305%)  
IL7R (0.2305%)  
PHF6 (0.2305%)  
REL (0.1976%)  
KLF4 (0.1646%)  
CDX2 (0.1976%)  
SFRP4 (0.2305%)  
HOOK3 (0.2305%)  
CBLC (0.2305%)  
NONO (0.1646%)  
FOXO4 (0.1976%)  
RAD21 (0.1317%)  
FUS (0.2305%)  
DDX5 (0.2305%)  
HSP90AB1 (0.2305%)  
JUN (0.1976%)  
ACKR3 (0.2305%)  
CCND2 (0.1646%)  
BCL10 (0.1976%)  
RPN1 (0.1976%)  
AKT1 (0.0988%)  
MLF1 (0.1976%)  
TPM3 (0.1646%)  
FANCE (0.1976%)  
RHOA (0.1646%)  
DDX3X (0.1976%)  
PRCC (0.1976%)  
NKX2-1 (0.1646%)  
NBN (0.1976%)  
GATA2 (0.1976%)  
TAL1 (0.1646%)  
TMEM127 (0.1646%)  
DEK (0.1976%)  
MYCN (0.1976%)  
CNOT3 (0.1976%)  
FOXL2 (0.1976%)  
PRKAR1A (0.0988%)  
STAT6 (0.1976%)  
CD74 (0.0329%)  
H3F3A (0.0659%)  
MDM4 (0.1646%)  
CNBP (0.1317%)  
LMO1 (0.1317%)  
GOLGA5 (0.1646%)  
FOXA1 (0.1646%)  
DDB2 (0.1646%)  
HERPUD1 (0.1317%)  
VHL (0.1646%)  
APOBEC3B (0.1646%)  
NUTM2D (0.1646%)  
GATA3 (0.1646%)  
CARS (0.1646%)  
CCND1 (0.1646%)  
CBFB (0.1646%)  
FEV (0.1317%)  
MYOD1 (0.1317%)  
RBM10 (0.1646%)  
MSN (0.1646%)  
WDCP (0.1646%)  
SET (0.1317%)  
PTK6 (0.1317%)  
BTK (0.1646%)  
MYC (0.1317%)  
TAL2 (0.0659%)  
FH (0.1317%)  
SDHAF2 (0.1646%)  
DAXX (0.1646%)  
SRSF2 (0.1317%)  
HIST1H3B (0.1646%)  
SMARCE1 (0.1646%)  
XPA (0.1317%)  
ZNF384 (0.1317%)  
TRIM27 (0.0988%)  
U2AF1 (0.1317%)  
MAX (0.0988%)  
B2M (0.1317%)  
PDGFB (0.1317%)  
PATZ1 (0.1317%)  
RPL5 (0.1317%)  
NAB2 (0.1317%)  
PIM1 (0.1317%)  
SSX1 (0.1317%)  
SS18 (0.1317%)  
LMNA (0.1317%)  
CD79B (0.1317%)  
CDKN2C (0.1317%)  
SRSF3 (0.1317%)  
HRAS (0.1317%)  
MYD88 (0.1317%)  
CXCR4 (0.1317%)  
FANCF (0.1317%)  
FANCG (0.0988%)  
FSTL3 (0.0988%)  
NUTM2B (0.0988%)  
FCGR2B (0.0988%)  
HMGA1 (0.0988%)  
ETV4 (0.0988%)  
BTG1 (0.0988%)  
DNAJB1 (0.0988%)  
SOX2 (0.0988%)  
MPL (0.0988%)  
ATF1 (0.0988%)  
HLF (0.0988%)  
CRLF2 (0.0988%)  
P2RY8 (0.0659%)  
GATA1 (0.0659%)  
SDHC (0.0988%)  
HOXC11 (0.0988%)  
HOXA13 (0.0988%)  
SIX1 (0.0988%)  
CEBPA (0.0988%)  
HIST1H4I (0.0988%)  
DDIT3 (0.0988%)  
KLF6 (0.0988%)  
HOXA11 (0.0988%)  
PHOX2B (0.0988%)  
TNFRSF14 (0.0659%)  
HOXD11 (0.0659%)  
IL2 (0.0659%)  
NFKBIE (0.0659%)  
SDHD (0.0659%)  
BIRC3 (0.0659%)  
HEY1 (0.0659%)  
RPL10 (0.0659%)  
NFKB2 (0.0659%)  
FAS (0.0659%)  
CREB1 (0.0659%)  
CCND3 (0.0659%)  
SFPQ (0.0659%)  
LYL1 (0.0659%)  
H3F3B (0.0659%)  
HOXA9 (0.0659%)  
SOCS1 (0.0659%)  
SSX4 (0.0329%)  
HOXD13 (0.0329%)  
PAFAH1B2 (0.0329%)  
SBDS (0.0329%)  
MUC1 (0.0329%)  
MAFB (0.0329%)  
TCL1A (0.0329%)  
CD79A (0.0329%)