Potential panel genes of breast cancer are (n=50):

Asia:  
PIK3CA (48.8837%)  
MED12 (19.389%)  
TP53 (13.0435%)  
ESR1 (3.2902%)  
RARA (3.1727%)  
KMT2D (2.5852%)  
SETD2 (2.4677%)  
BRCA1 (2.3502%)  
KMT2C (2.2327%)  
GATA3 (2.1152%)  
MAP3K1 (1.9976%)  
AKT1 (1.7626%)  
KRAS (1.5276%)  
ERBB2 (1.5276%)  
RB1 (1.2926%)  
CDH1 (1.1751%)  
PTEN (1.0576%)  
STK11 (1.0576%)  
KIT (0.9401%)  
EGFR (0.8226%)  
TET2 (0.7051%)  
MLH1 (0.7051%)  
ERBB4 (0.7051%)  
ATM (0.7051%)  
NF1 (0.5875%)  
ERBB3 (0.5875%)  
NOTCH2 (0.5875%)  
CDK12 (0.47%)  
CHD4 (0.47%)  
BCOR (0.47%)  
TBX3 (0.47%)  
RUNX1 (0.47%)  
FANCD2 (0.47%)  
NCOR1 (0.47%)  
FAT1 (0.47%)  
ALK (0.47%)  
PBRM1 (0.47%)  
ROS1 (0.3525%)  
PDGFRB (0.3525%)  
CHEK2 (0.3525%)  
SMAD4 (0.3525%)  
NSD1 (0.3525%)  
CREBBP (0.3525%)  
KAT6B (0.3525%)  
NOTCH1 (0.3525%)  
JAK3 (0.3525%)  
MYH9 (0.235%)  
JAK2 (0.235%)  
TPR (0.235%)  
BRIP1 (0.1175%)  
  
  
The world:  
PIK3CA (41.3433%)  
TP53 (32.9552%)  
LRP1B (3.5242%)  
CDH1 (7.6881%)  
ZFHX3 (3.3734%)  
ESR1 (6.4631%)  
PTPRT (2.9811%)  
ERBB4 (3.3975%)  
KMT2C (5.9622%)  
GATA3 (6.614%)  
MED12 (6.2519%)  
MAP3K1 (4.6949%)  
FHIT (2.432%)  
ALK (2.9208%)  
PTEN (3.9527%)  
CAMTA1 (2.3475%)  
GRIN2A (2.6552%)  
NF1 (3.482%)  
AFF3 (2.1966%)  
ERBB2 (3.3492%)  
ARID1A (3.313%)  
LPP (1.919%)  
AKT1 (3.2949%)  
RUNX1 (2.8121%)  
PREX2 (2.0699%)  
NCOR1 (2.6975%)  
ARID1B (2.4802%)  
FOXP1 (1.9311%)  
ATRX (2.0699%)  
EBF1 (1.7681%)  
NTRK3 (1.8526%)  
RAD51B (1.7621%)  
GPC3 (1.6173%)  
PRDM16 (1.7138%)  
KMT2D (2.4742%)  
PTPRK (1.6354%)  
TBX3 (2.2992%)  
RB1 (2.257%)  
ATM (2.3837%)  
BRCA2 (2.2328%)  
GPHN (1.6112%)  
ERC1 (1.2914%)  
EXT1 (1.4423%)  
RSPO2 (1.4906%)  
MSI2 (1.3035%)  
EGFR (1.9371%)  
NOTCH2 (1.8647%)  
CUX1 (1.5509%)  
MAP2K4 (2.1363%)  
ERG (1.4966%)  
SND1 (1.4242%)  
FAT1 (1.8406%)  
SPEN (1.7259%)  
MAML2 (1.4604%)  
AR (1.5992%)  
ATR (1.8285%)  
FOXA1 (1.7983%)  
RUNX1T1 (1.4302%)  
KMT2A (1.8285%)  
ZNF521 (1.2974%)  
SETD2 (1.4845%)  
MTOR (1.6837%)  
PBX1 (1.2974%)  
STAG2 (1.4785%)  
ARHGAP26 (1.2974%)  
SETBP1 (1.2492%)  
CREBBP (1.5931%)  
KDM6A (1.4362%)  
ROS1 (1.5207%)  
BRCA1 (1.5811%)  
NCOA2 (1.2371%)  
PIK3R1 (1.5449%)  
NSD1 (1.4302%)  
TP63 (1.2974%)  
BRIP1 (1.2431%)  
NRG1 (1.1164%)  
ERBB3 (1.4483%)  
APC (1.4121%)  
RNF213 (1.219%)  
ARID2 (1.394%)  
UBR5 (1.2793%)  
FAT4 (1.2431%)  
PDE4DIP (1.1888%)  
ETV6 (1.0561%)  
CACNA1D (1.1104%)  
CBFB (1.3699%)  
MET (1.2492%)  
JAK1 (1.2009%)  
BRAF (1.3397%)  
NCOR2 (1.2854%)  
DDR2 (1.2311%)  
GNAQ (1.0862%)  
CARD11 (1.1768%)  
PTPN13 (1.044%)  
NOTCH1 (1.1949%)  
GAS7 (1.0862%)  
FBXW7 (1.213%)  
KIT (1.1405%)  
TCF12 (1.0078%)  
TET1 (1.0561%)  
PTPRB (0.8811%)  
NCOA1 (1.0018%)  
MLLT10 (0.9293%)  
KAT6B (1.0742%)  
MLLT3 (0.9414%)  
HIP1 (0.9655%)  
CTCF (1.1104%)  
SF3B1 (1.0742%)  
CDC73 (0.9474%)  
JAK2 (1.038%)  
TCF7L2 (0.9655%)  
TSHR (0.8811%)  
CDK12 (0.8871%)  
PAX5 (0.9595%)  
MAP3K13 (0.9776%)  
EP300 (0.9957%)  
MYH11 (0.9655%)  
NSD3 (0.6517%)  
NFIB (0.875%)  
SMARCA4 (1.038%)  
PDGFRA (1.0199%)  
PTPRC (0.8992%)  
FGFR2 (0.9293%)  
PBRM1 (0.9474%)  
IKZF1 (0.9414%)  
KAT6A (0.7845%)  
FANCC (0.8931%)  
CDK6 (0.8992%)  
IKZF3 (0.6397%)  
PIK3CB (0.8931%)  
MITF (0.8147%)  
TET2 (0.9535%)  
MYO5A (0.8328%)  
DNMT3A (0.9293%)  
DDX10 (0.8328%)  
NFATC2 (0.8086%)  
RET (0.8388%)  
KRAS (0.9655%)  
ABL2 (0.7543%)  
WWTR1 (0.7181%)  
AFF1 (0.7966%)  
MYH9 (0.875%)  
CBLB (0.7785%)  
TRRAP (0.8931%)  
SMAD4 (0.8448%)  
CDH11 (0.7483%)  
FLT4 (0.863%)  
PTCH1 (0.8267%)  
ZBTB16 (0.7302%)  
BCL2 (0.694%)  
PPFIBP1 (0.7664%)  
CLIP1 (0.7604%)  
KDM5A (0.8086%)  
POLE (0.7845%)  
ABL1 (0.8207%)  
TSC2 (0.8388%)  
TBL1XR1 (0.7242%)  
ASXL1 (0.8267%)  
AFDN (0.7302%)  
SPOP (0.6397%)  
POLQ (0.7181%)  
BCOR (0.7724%)  
BLM (0.7905%)  
PRRX1 (0.7242%)  
DROSHA (0.694%)  
RARA (0.6698%)  
EXT2 (0.6759%)  
FLT3 (0.7061%)  
NUP98 (0.7181%)  
KDR (0.6879%)  
QKI (0.6457%)  
EPS15 (0.6879%)  
FLI1 (0.6517%)  
FGFR1 (0.7483%)  
RAP1GDS1 (0.6698%)  
FANCA (0.6638%)  
PALB2 (0.7061%)  
XPO1 (0.7121%)  
TRIM33 (0.7%)  
GNAS (0.7%)  
LATS2 (0.694%)  
BMPR1A (0.6517%)  
ETV1 (0.6578%)  
SYK (0.6578%)  
CLTC (0.5914%)  
BCL9 (0.6336%)  
ACVR1 (0.6457%)  
TRIM24 (0.6638%)  
MEN1 (0.694%)  
ARHGEF12 (0.6397%)  
SMAD2 (0.6698%)  
CDKN1B (0.6638%)  
TGFBR2 (0.6638%)  
TERT (0.6819%)  
LIFR (0.6095%)  
BARD1 (0.6276%)  
PPM1D (0.5371%)  
CREB3L2 (0.6095%)  
MAP2K1 (0.6457%)  
EML4 (0.6397%)  
KDM5C (0.6638%)  
TSC1 (0.6638%)  
BCR (0.6457%)  
NUMA1 (0.5733%)  
DNM2 (0.6095%)  
DICER1 (0.6035%)  
CLTCL1 (0.5612%)  
HOOK3 (0.5793%)  
ZMYM2 (0.5854%)  
SMAD3 (0.5793%)  
BCL11A (0.5793%)  
ABI1 (0.6216%)  
AXIN1 (0.5612%)  
CNTRL (0.6035%)  
HMGA2 (0.5612%)  
MSN (0.5793%)  
CCDC6 (0.5431%)  
TPR (0.6035%)  
ARHGAP35 (0.6095%)  
FANCD2 (0.6035%)  
NF2 (0.525%)  
MAPK1 (0.5673%)  
TOP1 (0.6155%)  
ITK (0.5492%)  
PAX3 (0.5371%)  
CHD4 (0.5431%)  
NIN (0.4828%)  
RBM10 (0.5914%)  
ATP2B3 (0.5793%)  
WRN (0.5431%)  
FOXO1 (0.5129%)  
MSH2 (0.5612%)  
JAK3 (0.5854%)  
EZH2 (0.5854%)  
FBXO11 (0.5009%)  
EPAS1 (0.5129%)  
PLAG1 (0.4888%)  
BCL11B (0.5673%)  
FOXO3 (0.519%)  
CBL (0.5612%)  
MSH6 (0.5612%)  
CDKN2A (0.5069%)  
ETV5 (0.4828%)  
LEF1 (0.525%)  
RANBP2 (0.5552%)  
RAF1 (0.5733%)  
CBFA2T3 (0.4586%)  
KTN1 (0.5431%)  
NUP214 (0.4767%)  
CASP8 (0.5492%)  
HRAS (0.4948%)  
SRC (0.4707%)  
IKBKB (0.3681%)  
CHEK2 (0.5069%)  
MDM2 (0.5009%)  
NDRG1 (0.4828%)  
BTK (0.5371%)  
LATS1 (0.5069%)  
BCORL1 (0.5431%)  
POT1 (0.4526%)  
MECOM (0.519%)  
NSD2 (0.519%)  
AMER1 (0.525%)  
CRTC3 (0.4466%)  
WIF1 (0.4647%)  
STRN (0.5009%)  
CIC (0.519%)  
PTPN11 (0.4888%)  
MLH1 (0.4948%)  
SUZ12 (0.4707%)  
TRIP11 (0.4707%)  
RABEP1 (0.4526%)  
STAT3 (0.4888%)  
RNF43 (0.4647%)  
STK11 (0.4948%)  
AKT2 (0.4767%)  
PCM1 (0.4285%)  
KNL1 (0.4888%)  
ARNT (0.4224%)  
RHOA (0.4526%)  
ERCC4 (0.4767%)  
REL (0.4586%)  
PAX7 (0.4466%)  
FGFR4 (0.4948%)  
SUFU (0.4647%)  
WT1 (0.4586%)  
NTRK1 (0.4647%)  
CRTC1 (0.4224%)  
NFE2L2 (0.4828%)  
PDGFRB (0.4888%)  
SMO (0.4767%)  
POLD1 (0.4466%)  
AXIN2 (0.4043%)  
NBN (0.4405%)  
PPP2R1A (0.4526%)  
BRD4 (0.4586%)  
BAP1 (0.4526%)  
ELL (0.3923%)  
FIP1L1 (0.4043%)  
AFF4 (0.4224%)  
PRDM1 (0.4285%)  
ACVR2A (0.4405%)  
ERCC5 (0.4466%)  
PMS2 (0.4104%)  
RSPO3 (0.3862%)  
RECQL4 (0.4466%)  
USP8 (0.3741%)  
MRTFA (0.3923%)  
USP6 (0.3621%)  
CCND2 (0.4043%)  
NT5C2 (0.356%)  
HSP90AA1 (0.4104%)  
IL21R (0.3802%)  
PICALM (0.3802%)  
SS18 (0.3621%)  
ELF4 (0.3923%)  
CTNNB1 (0.3802%)  
ERCC3 (0.3983%)  
PLCG1 (0.3862%)  
HNF1A (0.3741%)  
BCL6 (0.3741%)  
FCRL4 (0.3621%)  
SDHC (0.3379%)  
LASP1 (0.3198%)  
SDHA (0.3198%)  
PPARG (0.3681%)  
PAX8 (0.356%)  
IL6ST (0.3379%)  
RAD21 (0.356%)  
SMARCB1 (0.356%)  
HIST1H3B (0.3379%)  
EIF3E (0.3259%)  
COL1A1 (0.2655%)  
ACSL3 (0.3198%)  
IDH1 (0.3078%)  
BUB1B (0.3259%)  
PHF6 (0.3078%)  
EZR (0.3198%)  
DAXX (0.3319%)  
ACVR1B (0.344%)  
PRCC (0.3259%)  
HLF (0.2233%)  
CARS (0.3138%)  
KEAP1 (0.3078%)  
MDM4 (0.3259%)  
PRKAR1A (0.3259%)  
ZRSR2 (0.2897%)  
PDCD1LG2 (0.3138%)  
MYB (0.3017%)  
KLF4 (0.3078%)  
ERCC2 (0.3078%)  
IRF4 (0.3198%)  
EIF4A2 (0.3138%)  
MALT1 (0.3259%)  
MPL (0.3138%)  
HIF1A (0.3017%)  
ETNK1 (0.2897%)  
STAT5B (0.3078%)  
TPM3 (0.2957%)  
MN1 (0.2897%)  
BRD3 (0.2716%)  
PPP6C (0.2776%)  
CREB1 (0.3017%)  
FGFR1OP (0.2474%)  
TMPRSS2 (0.2776%)  
FGFR3 (0.2836%)  
IL7R (0.2957%)  
SH2B3 (0.3078%)  
TRAF7 (0.2836%)  
CIITA (0.2836%)  
LRIG3 (0.2836%)  
STIL (0.2595%)  
DDX3X (0.2474%)  
PSIP1 (0.2655%)  
CYLD (0.2655%)  
ZNF331 (0.2474%)  
IRS4 (0.2655%)  
GATA1 (0.2655%)  
SS18L1 (0.2354%)  
TFEB (0.2112%)  
SDHB (0.2836%)  
GNA11 (0.2233%)  
XPC (0.2655%)  
FH (0.2414%)  
CREB3L1 (0.2233%)  
KIF5B (0.2414%)  
ASPSCR1 (0.2474%)  
PML (0.2595%)  
MLLT1 (0.2354%)  
NR4A3 (0.2716%)  
MAP2K2 (0.2595%)  
TNFAIP3 (0.2595%)  
TCF3 (0.2535%)  
LCK (0.2172%)  
DEK (0.2293%)  
TFE3 (0.2474%)  
TCEA1 (0.2293%)  
IDH2 (0.2354%)  
TFG (0.2354%)  
COL2A1 (0.2354%)  
RHOH (0.2293%)  
GOPC (0.2414%)  
JUN (0.2233%)  
CCND1 (0.2293%)  
NPM1 (0.2293%)  
CSF3R (0.2293%)  
GATA2 (0.2112%)  
ATF1 (0.1991%)  
HLA-A (0.1991%)  
FLCN (0.2233%)  
SMARCE1 (0.181%)  
NRAS (0.2112%)  
EWSR1 (0.2112%)  
HNRNPA2B1 (0.181%)  
SALL4 (0.2052%)  
FUBP1 (0.2172%)  
LMNA (0.2052%)  
ATP1A1 (0.1991%)  
CBLC (0.2052%)  
SRSF2 (0.1629%)  
STAT6 (0.1871%)  
SLC45A3 (0.2112%)  
LMO2 (0.1931%)  
ATIC (0.1931%)  
RAC1 (0.2052%)  
DDB2 (0.1991%)  
DDX5 (0.1448%)  
SH3GL1 (0.1629%)  
FOXL2 (0.169%)  
MYCN (0.1991%)  
PDGFB (0.169%)  
MYC (0.1931%)  
PER1 (0.1629%)  
LZTR1 (0.181%)  
CNOT3 (0.175%)  
LMO1 (0.1629%)  
TPM4 (0.175%)  
ZNF384 (0.1629%)  
FES (0.175%)  
MAX (0.1629%)  
SLC34A2 (0.175%)  
CCNE1 (0.1871%)  
GOLGA5 (0.181%)  
VHL (0.169%)  
TENT5C (0.1569%)  
ELK4 (0.169%)  
RPN1 (0.1629%)  
FCGR2B (0.169%)  
FUS (0.175%)  
KCNJ5 (0.169%)  
FAS (0.1509%)  
CCNB1IP1 (0.1448%)  
NUTM1 (0.1629%)  
FOXO4 (0.169%)  
HSP90AB1 (0.1629%)  
BCL9L (0.1509%)  
B2M (0.1448%)  
NKX2-1 (0.1448%)  
SSX1 (0.1388%)  
CD79A (0.1448%)  
CD274 (0.1388%)  
DCTN1 (0.1388%)  
TRIM27 (0.1267%)  
PATZ1 (0.1328%)  
YWHAE (0.1448%)  
SDC4 (0.1509%)  
CEBPA (0.1509%)  
SFPQ (0.1388%)  
CDKN2C (0.1388%)  
KDSR (0.1328%)  
MLF1 (0.1448%)  
NFKBIE (0.1388%)  
CANT1 (0.1448%)  
POU2AF1 (0.1328%)  
SET (0.1207%)  
BCL7A (0.1267%)  
FANCG (0.1328%)  
U2AF1 (0.1207%)  
DDX6 (0.1207%)  
H3F3A (0.1328%)  
PRKACA (0.1328%)  
NONO (0.1207%)  
MUC1 (0.1267%)  
MUTYH (0.1207%)  
FANCE (0.1207%)  
CDX2 (0.1267%)  
XPA (0.1267%)  
SOX2 (0.1267%)  
BIRC3 (0.1267%)  
WAS (0.1267%)  
H3F3B (0.1207%)  
MYCL (0.1086%)  
PHOX2B (0.1207%)  
ACKR3 (0.1147%)  
BAX (0.1026%)  
CALR (0.0905%)  
CCND3 (0.0845%)  
HOXA13 (0.0905%)  
RBM15 (0.1086%)  
DNAJB1 (0.1026%)  
RPL5 (0.1086%)  
SDHAF2 (0.1026%)  
SFRP4 (0.1086%)  
KLK2 (0.0966%)  
PIM1 (0.1086%)  
TAL1 (0.1026%)  
ETV4 (0.1026%)  
APOBEC3B (0.1026%)  
RPL10 (0.1026%)  
KLF6 (0.0966%)  
TNFRSF14 (0.1026%)  
CNBP (0.0845%)  
BCL10 (0.0966%)  
PRF1 (0.0905%)  
SRSF3 (0.0905%)  
NAB2 (0.0724%)  
BCL3 (0.0845%)  
FANCF (0.0785%)  
NFKB2 (0.0845%)  
CXCR4 (0.0845%)  
CD79B (0.0905%)  
WDCP (0.0845%)  
PAFAH1B2 (0.0905%)  
MYD88 (0.0905%)  
TMEM127 (0.0905%)  
MTCP1 (0.0845%)  
MYOD1 (0.0724%)  
CDK4 (0.0785%)  
SBDS (0.0664%)  
HERPUD1 (0.0724%)  
POU5F1 (0.0664%)  
HOXA11 (0.0724%)  
HOXC13 (0.0724%)  
TLX1 (0.0664%)  
HOXC11 (0.0724%)  
PTK6 (0.0724%)  
HOXD13 (0.0724%)  
HEY1 (0.0603%)  
MAF (0.0603%)  
IL2 (0.0664%)  
MLLT11 (0.0664%)  
MAFB (0.0664%)  
DDIT3 (0.0664%)  
RPL22 (0.0664%)  
NUTM2D (0.0603%)  
CRLF2 (0.0603%)  
P2RY8 (0.0603%)  
TCL1A (0.0483%)  
HOXA9 (0.0543%)  
FSTL3 (0.0543%)  
FEV (0.0483%)  
TNFRSF17 (0.0483%)  
SIX1 (0.0483%)  
CD74 (0.0422%)  
CHCHD7 (0.0483%)  
NUTM2B (0.0483%)  
HIST1H4I (0.0483%)  
HOXD11 (0.0422%)  
OLIG2 (0.0362%)  
HMGA1 (0.0362%)  
SOCS1 (0.0362%)  
BTG1 (0.0302%)  
LYL1 (0.0302%)  
RMI2 (0.0181%)  
SDHD (0.0302%)  
TAL2 (0.0241%)  
TLX3 (0.0121%)