### Table S2. The mutation list of tumor samples

- **Patient_No=Patient Number**
- **Gene=HGNC Gene Symbol**
- **Chr_start=Start position on the Chromosome. Chromosome:Start**
- **Chr_end=End position on the Chromosome. Chromosome:End**
- **Ref=Reference Allele**
- **Alt=Altered Allele**
- **Variant_Classification=Classification of variants**
- **AAChange=Change of Amino Acid**
- **AF=Proportion of Altered Allele**

| Patient_No | Gene   | AAChange | Variant Classification |
|------------|--------|----------|------------------------|
| P1         | ARID1A | c.5329G>T(p.E1777*) | STOP GAINED            |
| P1         | PDGFRB |           | Amplication             |
| P1         | KMT2B  | c.4738C>A(p.Q1580K)  | MISSENSE               |
| P1         | APC    | c.646C>T(p.R216*)    | STOP GAINED            |
| P1         | FANCD2 | c.3139G>T(p.G1047*)  | STOP GAINED            |
| P1         | EXT2   | c.1084T>G(p.S362A)   | MISSENSE               |
| P1         | ERCC4  | c.1177G>A(p.A393T)   | MISSENSE               |
| P1         | CSF1R  |           | Amplication             |
| P1         | MTO1   | c.5930C>A(p.T1977K)  | MISSENSE               |
| P1         | APC    | c.8192C>A(p.P2731H)  | MISSENSE               |
| P1         | RB1    | c.2206C>A(p.Q736K)   | MISSENSE               |
| P1         | JAK1   | c.2593G>T(p.V865L)   | MISSENSE               |
| P1         | KRAS   | c.34G>T(p.G12C)      | MISSENSE               |
| P1         | APC    | c.734C>A(p.S245*)    | STOP GAINED            |
| P1         | ERBB4  | c.2685G>T(p.R895S)   | MISSENSE               |
| P1         | FBXW7  | c.608C>A(p.S203*)    | STOP GAINED            |
| P1         | TP53   | c.725G>A(p.C242Y)    | MISSENSE               |
| P1         | CSF1R  |           | Amplication             |
| P1         | PDGFRB |           | Amplication             |
| P1         | CEBPA  |           | Deletion                |
| P2         | FGFR1  |           | Amplication             |
| P2         | FGFR1  | FGFR1:exon2~IGR (upst FUSION) | |
| P2         | APC    | c.3944C>A(p.S1315*)  | STOP GAINED            |
| P2         | LRP1B  | c.2504-1G>C         | SPLICE                 |
| P2         | MET    | c.1447T>A(p.S483T)   | MISSENSE               |
| P2         | AXIN2  | c.330C>A(p.F110L)    | MISSENSE               |
| P2         | POLH   | c.2083C>T(p.R695C)   | MISSENSE               |
| P2         | KLLN   | c.428_433delCCCCGCC(p.INFRAME INDEL) | |
| P2         | FGFR1  |           | Amplication             |
| P2         | FGFR1  |           | Amplication             |
| P2         | FGFR1  |           | Amplication             |
| P3         | MAP2K4 | c.439A>G(p.M147V)    | MISSENSE               |
| P3         | PKHD1  | c.5684A>G(p.E1895G)  | MISSENSE               |
| P3         | BRAF   | c.1799T>A(p.V600E)   | MISSENSE               |
| P3         | SMAD4  | c.250-1G>C          | SPLICE                 |
| Gene     | Mutation Description                  | Type          |
|----------|---------------------------------------|---------------|
| TP53     | c.524G>A (p.R175H)                    | Missense      |
| PTEN     | Deletion                              |               |
| CDKN2B   | Deletion                              |               |
| FGFR2    | c.1393G>A (p.E465K)                   | Missense      |
| PRKCI    | c.396G>T (p.W132C)                    | Missense      |
| CHD4     | c.3748G>A (p.D1250N)                  | Missense      |
| KEAP1    | c.701G>C (p.R234P)                    | Missense      |
| CDH1     | c.2216A>T (p.E739V)                   | Missense      |
| APC      | c.3934G>T (p.G1312*)                  | Stop Gained   |
| PIK3R1   | c.41A>T (p.Y14F)                      | Missense      |
| FANCD2   | c.2041A>G (p.K681E)                   | Missense      |
| SMAD4    | c.40C>T (p.S135F)                     | Missense      |
| TP53     | c.824G>A (p.C275Y)                    | Missense      |
| KRAS     | c.38G>A (p.G13D)                      | Missense      |
| CDK6     | c.7_9delAAG (p.K3del)                 | Inframe INDEL |
| PIK3R1   | c.40dupT (p.Y14Lfs*2)                 | Frameshift    |
| ERBB4    | c.305delT (p.L102Yfs*2C)              | Frameshift    |
| TMPRSS2  | c.145G>A (p.V49M)                     | Missense      |
| NSD1     | c.404C>T (p.S135F)                    | Missense      |
| TP53     | c.743G>A (p.R248Q)                    | Missense      |
| SMAD4    | c.1484T>C (p.L495P)                   | Missense      |
| ATM      | c.7751_7754delCTAA (p.FRAMESHIFT)     |               |
| APC      | c.4395delT (p.S1465Rfs*)              | Frameshift    |
| SLC3A2   | c.899delA (p.K300Rfs*3)               | Frameshift    |
| AMER1    | c.2074G>A (p.E692K)                   | Missense      |
| AMER1    | c.1921C>T (p.R641*)                   | Stop Gained   |
| SMARCB1  | c.946C>T (p.R316W)                    | Missense      |
| SMARCA4  | c.442G>A (p.G148R)                    | Missense      |
| RECL4    | c.3349G>A (p.G1117R)                  | Missense      |
| KMT2A    | c.2318delC (p.P773Rfs*)               | Frameshift    |
| NSD1     | c.2175_2176invGT (p.S7)               | Missense      |
| CYLD     | c.64delT (p.Y22Tfs*25)                | Frameshift    |
| RNF43    | c.1976delG (p.G659Vfs*2)              | Frameshift    |
| TGFB2    | c.317T>C (p.L106P)                    | Missense      |
| LZTR1    | c.27delG (p.Q10Rfs*15)                | Frameshift    |
| MAP2K4   | c.961G>A (p.V321M)                    | Missense      |
| EP300    | c.1943G>A (p.R648Q)                   | Missense      |
| TGFB2    | c.382_383delAA (p.K121)               | Frameshift    |
| BRAF     | c.1682C>T (p.A561V)                   | Missense      |
| TTF1     | c.2671G>A (p.A891T)                   | Missense      |
| RPTOR    | c.2362C>T (p.R788C)                   | Missense      |
| BRCA2    | c.9097delA (p.T3033Lfs*)              | Frameshift    |
| JARID2   | c.1186dupG (p.A396Gfs)                | Frameshift    |
| SRC      | c.659G>A (p.R220H)                    | Missense      |
| B2M      | c.45_48delTTCT (p.S16A)               | Frameshift    |
| CDKN2A   | c.335G>A (p.R112H)                    | Missense      |
| Gene   | Mutation Description                        | Type     |
|--------|--------------------------------------------|----------|
| TERT   | c.1931C>T(p.T644M)                          | MISSENSE |
| FOXP1  | c.1328A>G(p.Y443C)                          | MISSENSE |
| TGFBR2 | c.321dupC(p.Y108Lfs*3)                     | FRAMESHIFT |
| PRKCI  | c.30G>A(p.M10I)                             | MISSENSE |
| PTCH1  | c.2082G>T(p.Q694H)                          | MISSENSE |
| CASP8  | c.793C>T(p.R265W)                           | MISSENSE |
| APC    | c.6747dupA(p.G2250Rfs)                      | FRAMESHIFT |
| CHD4   | c.2923C>T(p.R975C)                          | MISSENSE |
| RRM1   | c.902T>C(p.L301P)                           | MISSENSE |
| NRG1   | c.1361delC(p.P454Lfs*)                      | FRAMESHIFT |
| NSD1   | c.1034C>T(p.P345L)                          | MISSENSE |
| PARK2  | c.572G>A(p.R191Q)                           | MISSENSE |
| ARID1B | c.4556G>A(p.R1519H)                         | MISSENSE |
| NAT1   | c.98G>A(p.R33Q)                             | MISSENSE |
| EP300  | c.5817G>T(p.Q1939H)                         | MISSENSE |
| DOT1L  | c.3097G>A(p.G1033S)                         | MISSENSE |
| RNF43  | c.375+2T>C                                 | SPLICE   |
| TSC1   | c.1838C>A(p.P613Q)                          | MISSENSE |
| BAX    | c.130G>A(p.E44K)                            | MISSENSE |
| CDK12  | c.893G>A(p.R298Q)                           | MISSENSE |
| RAD54L | c.433G>A(p.V145I)                           | MISSENSE |
| FLT4   | c.1924delC(p.R642Afs)                       | FRAMESHIFT |
| KDR    | c.3773C>T(p.T1258M)                         | MISSENSE |
| CREBBP | c.3668G>A(p.R1223H)                         | MISSENSE |
| TGFBR2 | c.1198C>T(p.L400F)                          | MISSENSE |
| BAP1   | c.175C>T(p.R59W)                            | MISSENSE |
| FBXW7  | c.1393C>T(p.R465C)                          | MISSENSE |
| B2M    | c.43_44delCT(p.L15Ffs*)                     | FRAMESHIFT |
| POT1   | c.1892A>G(p.E631G)                          | MISSENSE |
| ASXL1  | c.1934dupG(p.G646Wfs)                       | FRAMESHIFT |
| PRDM1  | c.126G>T(p.E42D)                            | MISSENSE |
| RAD50  | c.1722dupA(p.Q575Tfs)                       | FRAMESHIFT |
| ATM    | c.9023G>A(p.R3008H)                         | MISSENSE |
| MSH2   | c.1288A>T(p.K430*)                          | STOP GAINED |
| NBN    | c.797C>T(p.P266L)                           | MISSENSE |
| KMT2B  | c.3057delA(p.G1020Afs)                      | FRAMESHIFT |
| BAX    | c.34_34+1insT(p.G12Vfs)                     | FRAMESHIFT |
| GRIN2A | c.2147C>T(p.A716V)                          | MISSENSE |
| SMARCA4| c.2729C>T(p.T910M)                          | MISSENSE |
| DOT1L  | c.3694G>A(p.A1232T)                         | MISSENSE |
| RNF43  | c.349_350delCinsA(p.)                       | FRAMESHIFT |
| POLD1  | c.2158G>A(p.V720I)                          | MISSENSE |
| BRD4   | c.3178C>T(p.R1060C)                         | MISSENSE |
| PLCB4  | c.685dupA(p.I229Nfs*7)                      | FRAMESHIFT |
| PIK3C3 | c.1459T>C(p.S487P)                          | MISSENSE |
| QKI    | c.401delA(p.K134Rfs*1)                      | FRAMESHIFT |
| MSH6   | Deletion                                   |          |
| Gene   | Mutation                      | Type       |
|--------|-------------------------------|------------|
| P8 NF1 | c.2281G>A(p.A761T)           | MISSENSE   |
| P8 AURKA | c.481C>T(p.L161F)         | MISSENSE   |
| P8 GRIN2A | c.3475C>T(p.R1159C)       | MISSENSE   |
| P8 RAF1  | c.770C>T(p.S257L)          | MISSENSE   |
| P8 KMT2C | c.2690G>A(p.R897Q)         | MISSENSE   |
| P8 ROS1  | c.3025G>A(p.E1009K)        | MISSENSE   |
| P8 NFE2L2 | c.938T>G(p.L313R)          | MISSENSE   |
| P8 CDK12 | c.923G>T(p.R308I)          | MISSENSE   |
| P8 POLE  | c.857C>G(p.P286R)          | MISSENSE   |
| P8 APC   | c.1307A>C(p.N436T)         | MISSENSE   |
| P8 GATA1 | c.1117T>C(p.S373P)         | MISSENSE   |
| P8 GRIN2A | c.581G>A(p.S194N)          | MISSENSE   |
| P8 RHOA  | c.365G>A(p.R122Q)          | MISSENSE   |
| P8 APC   | c.694C>T(p.R232*)          | STOP GAINED|
| P8 SMARCA4 | c.2644G>A(p.E882K)      | MISSENSE   |
| P8 BARD1 | c.775G>T(p.D259Y)          | MISSENSE   |
| P8 RET   | c.2083C>T(p.P695S)         | MISSENSE   |
| P8 ROS1  | c.367A>C(p.N123H)          | MISSENSE   |
| P8 C11orf30 | c.2648C>T(p.S883L)     | MISSENSE   |
| P8 FLT1  | c.2926A>C(p.S976R)         | MISSENSE   |
| P8 ERCC5 | c.628G>T(p.E210*)          | STOP GAINED|
| P8 ATR   | c.5942A>C(p.E1981A)        | MISSENSE   |
| P8 PDGFR | c.649G>T(p.E217*)          | STOP GAINED|
| P8 FANCC | c.956C>T(p.T319M)          | MISSENSE   |
| P8 TOP2A | c.2719T>G(p.Y907D)         | MISSENSE   |
| P8 ERCC5 | c.211C>T(p.R71C)           | MISSENSE   |
| P8 BRCA2 | c.5782G>T(p.E1928*)        | STOP GAINED|
| P8 NBN   | c.904C>T(p.L302F)          | MISSENSE   |
| P8 CYSLTR2 | c.626G>A(p.G209D)      | MISSENSE   |
| P8 NOTCH1 | c.6376G>A(p.G2126R)      | MISSENSE   |
| P8 BRD4  | c.297G>T(p.K99N)           | MISSENSE   |
| P8 TAP2  | c.1795G>T(p.D599Y)         | MISSENSE   |
| P8 CBLB  | c.2850G>T(p.K950N)         | MISSENSE   |
| P8 TAP2  | c.1620C>A(p.C540*)         | STOP GAINED|
| P8 PMS2  | c.1862C>A(p.S621Y)         | MISSENSE   |
| P8 KMT2A | c.9262C>T(p.L3088F)        | MISSENSE   |
| P8 ROS1  | c.3489G>T(p.K1163N)        | MISSENSE   |
| P8 PIK3R1 | c.1042C>T(p.R348*)        | STOP GAINED|
| P8 FLCN  | c.50G>A(p.R17H)            | MISSENSE   |
| P8 TET2  | c.3310T>G(p.F1104V)        | MISSENSE   |
| P8 PGR   | c.1817G>T(p.R606I)         | MISSENSE   |
| P8 THADA | c.5822C>T(p.S1941L)        | MISSENSE   |
| P8 SETD2 | c.1334G>A(p.R445H)         | MISSENSE   |
| P8 ARID1A | c.3419C>A(p.S1140Y)       | MISSENSE   |
| P8 ABCB1 | c.836A>C(p.K327T)          | MISSENSE   |
| P8 ATM   | c.5584C>T(p.L1862F)        | MISSENSE   |
| P8 CHD4  | c.3659A>G(p.K1220T)        | MISSENSE   |
| Gene   | Change   | Description     |
|--------|----------|-----------------|
| BRCA2  | c.7559G>A(p.R2520Q) | MISSENSE |
| PKHD1  | c.6084G>T(p.K2028N) | MISSENSE |
| HGF    | c.1915A>C(p.N639H) | MISSENSE |
| PDGFRB | c.2335G>A(p.V779I) | MISSENSE |
| CYP2D6 | c.262C>T(p.R88C) | MISSENSE |
| FH     | c.472_473delAGinsCA | MISSENSE |
| ROS1   | c.3250A>C(p.L1084L) | MISSENSE |
| NTRK2  | c.1150A>C(p.I384L) | MISSENSE |
| RET    | c.1187C>T(p.S396L) | MISSENSE |
| APC    | c.5522A>T(p.G1841V) | MISSENSE |
| KITLG  | c.425G>T(p.R142I) | MISSENSE |
| PIK3CA | c.2236G>A(p.D746N) | MISSENSE |
| RPTOR  | c.333G>T(p.E111D) | MISSENSE |
| ATR    | c.760G>T(p.E254*) | STOP GAINED |
| SF3B1  | c.756A>C(p.K252N) | MISSENSE |
| ALK    | c.3541C>T(p.R1181C) | MISSENSE |
| EPAS1  | c.2216G>A(p.R739Q) | MISSENSE |
| ERBB4  | c.2557G>T(p.S853A) | MISSENSE |
| TAP2   | c.1051G>T(p.E351*) | STOP GAINED |
| AR     | c.878C>A(p.S293Y) | MISSENSE |
| FAT1   | c.2542G>T(p.D848Y) | MISSENSE |
| FGFR2  | c.2387C>A(p.S796Y) | MISSENSE |
| MLH3   | c.1666G>T(p.D556Y) | MISSENSE |
| ERBB4  | c.458A>C(p.K153T) | MISSENSE |
| CBLB   | c.2078C>A(p.S693Y) | MISSENSE |
| ROS1   | c.980G>T(p.G327V) | MISSENSE |
| ROS1   | c.1579G>T(p.E527*) | STOP GAINED |
| TAP2   | c.405A>C(p.K135N) | MISSENSE |
| SETD2  | c.3700G>T(p.E1234*) | STOP GAINED |
| BARD1  | c.1435T>G(p.L479V) | MISSENSE |
| FANCD2 | c.821G>T(p.R2741) | MISSENSE |
| SETD2  | c.4568G>A(p.R1523H) | MISSENSE |
| IFNG   | c.355A>T(p.T119S) | MISSENSE |
| CDA    | c.429G>T(p.Q143H) | MISSENSE |
| TGFB2  | c.1208G>A(p.R403H) | MISSENSE |
| LYN    | c.998G>A(p.S333N) | MISSENSE |
| MAP2K4 | c.395G>T(p.R1321) | MISSENSE |
| LRP1B  | c.466C>A(p.Q156K) | MISSENSE |
| PREX2  | c.3898A>G(p.T1300A) | MISSENSE |
| GRIN2A | c.148G>A(p.E50K) | MISSENSE |
| FANCC  | c.1603C>T(p.R535C) | MISSENSE |
| SETD2  | c.2794G>A(p.V932I) | MISSENSE |
| WRN    | c.1519G>T(p.E507*) | STOP GAINED |
| MAP3K1 | c.4165T>G(p.F1389V) | MISSENSE |
| ARID2  | c.1258G>A(p.E420K) | MISSENSE |
| APC    | c.503G>T(p.R168I) | MISSENSE |
| WAS    | c.93G>T(p.E31D) | MISSENSE |
| Gene | Mutation | Type       |
|------|----------|------------|
| XPC  | c.1536A>C(p.K512N) | MISSENSE   |
| BRCA2| c.2544G>T(p.K848N) | MISSENSE   |
| CTNNB1| c.664T>C(p.S222P) | MISSENSE   |
| CASP8 | c.52G>T(p.D18Y) | MISSENSE   |
| ATM  | c.8071C>T(p.R2691C) | MISSENSE   |
| AKT1 | c.1003C>A(p.L335M) | MISSENSE   |
| ATM  | c.6013C>A(p.L2005I) | MISSENSE   |
| IL7R | c.1151C>A(p.S384Y) | MISSENSE   |
| SETD2| c.2751T>G(p.S917R) | MISSENSE   |
| FAT1 | c.3575A>C(p.K1192T) | MISSENSE   |
| FANCC| c.263A>C(p.K88T) | MISSENSE   |
| MPL  | c.373C>A(p.L125I) | MISSENSE   |
| EP300| c.4219A>C(p.K1407Q) | MISSENSE   |
| LRP1B| c.1598G>T(p.G533V) | MISSENSE   |
| PTPN11| c.923A>C(p.N308T) | MISSENSE   |
| MRE11A| c.391G>A(p.D131N) | MISSENSE   |
| ZNF217| c.1731G>T(p.K577N) | MISSENSE   |
| PRKCI| c.114A>G(p.I38M) | MISSENSE   |
| BRCA2| c.2275C>A(p.L759I) | MISSENSE   |
| TEK  | c.3022G>A(p.E1008K) | MISSENSE   |
| ETV6 | c.849C>A(p.H283Q) | MISSENSE   |
| DOT1L| c.4064C>T(p.S1355L) | MISSENSE   |
| XRCC2| c.1377T>G(p.F46C) | MISSENSE   |
| TAP2 | c.223dupC(p.L75Pfs*92) | FRAMESHIFT |
| APC  | c.4348C>T(p.R1450*) | STOP GAINED |
| BRCA2| c.4301A>C(p.K1434T) | MISSENSE   |
| NSD1 | c.2378_2379insC(p.K79) | FRAMESHIFT |
| BAI3 | c.544G>T(p.E182*) | STOP GAINED |
| BLM  | c.79C>A(p.L27I) | MISSENSE   |
| FANCI| c.1315G>T(p.E439*) | STOP GAINED |
| PTK2 | c.570G>T(p.K190N) | MISSENSE   |
| PLK1 | c.912C>A(p.F304L) | MISSENSE   |
| PDE11A| c.1112C>T(p.S371F) | MISSENSE   |
| LRP1B| c.10912C>T(p.R3638W) | MISSENSE   |
| CYLD | c.372A>C(p.Q124H) | MISSENSE   |
| PDGFRA| c.2041G>T(p.D681Y) | MISSENSE   |
| MAP2K4| c.200G>T(p.G67V) | MISSENSE   |
| ZNF217| c.3089G>T(p.R1030I) | MISSENSE   |
| CYSLTR2| c.582A>C(p.K194N) | MISSENSE   |
| MAP3K4| c.665G>A(p.R222H) | MISSENSE   |
| LRP1B| c.6018G>T(p.E2006D) | MISSENSE   |
| JAK1 | c.3416G>A(p.R1139Q) | MISSENSE   |
| MTOR | c.7513C>T(p.R2505*) | STOP GAINED |
| CYSLTR2| c.703G>T(p.E235*) | STOP GAINED |
| PIK3R1| c.1157G>A(p.R386Q) | MISSENSE   |
| TUBB3 | c.891G>T(p.K297N) | MISSENSE   |
| SETD2| c.71+2T>C | SPLICE     |
| Gene  | Mutation  | Description     |
|-------|-----------|-----------------|
| SF3B1 | c.944G>A  | p.R315Q         |
| CHEK2 | c.1369G>T | p.E457*         |
| ROS1  | c.2293A>C | p.K765Q         |
| ESR1  | c.1702T>G | p.L568V         |
| ATRX  | c.3171G>T | p.K1057N        |
| NXX2-1| c.821C>T  | p.A274V         |
| PREX2 | c.2894A>C | p.D965A         |
| MLLT4 | c.131G>T  | p.R44I          |
| TAP1  | c.806G>A  | p.G269D         |
| PDGFRA| c.2166T>G | p.I722M         |
| NFE2L2| c.1772T>G | p.V591A         |
| PTPN13| c.2767C>T | p.R923*         |
| POT1  | c.587T>G  | p.V196G         |
| PDE11A| c.1865C>T | p.A622V         |
| IKBKE | c.419A>G  | p.N140S         |
| HSPH1 | c.1180T>G | p.F394V         |
| JAK2  | c.1244A>C | p.K415T         |
| MSH2  | c.1738G>T | p.E580*         |
| ATRX  | c.1911G>T | p.E637D         |
| QKI   | c.451T>G  | p.L151V         |
| CTNNB1| c.264G>T  | p.M88I          |
| FOXP1 | c.1573C>T | p.R525*         |
| WAS   | c.122G>T  | p.R411L         |
| DTL   | c.544G>A  | p.V182M         |
| KMT2B | c.3704C>T | p.R1235Q        |
| PRKAR1A| c.153G>T | p.R51S          |
| ATRX  | c.3021A>C | p.Q1007H        |
| ATRX  | c.3392G>T | p.R1131I        |
| PGR   | c.1349C>A | p.S450Y         |
| APC   | c.4154G>T | p.S1385I        |
| CDC73 | c.1450C>T | p.R484C         |
| ATM   | c.6001T>G | p.L2001V        |
| WAS   | c.280C>T  | p.R94W          |
| NF1   | c.7720G>T | p.E2574*        |
| ATIC  | c.1136G>A | p.R379Q         |
| IFNE  | c.95G>T   | p.R32I          |
| PDGFRA| c.1425G>T | p.E475D         |
| AMER1 | c.2570G>A | p.R857Q         |
| BRIP1 | c.752G>A  | p.R251H         |
| NBN   | c.1589C>A | p.S530Y         |
| FAT1  | c.3209G>A | p.R1070Q        |
| NF2   | c.300T>G  | p.F100L         |
| MUTYH | c.1517T>C | p.M506T         |
| PKHD1 | c.6388G>A | p.A2130T        |
| CHEK2 | c.1519G>T | p.A507S         |
| Gene       | Variant | Description         | Class       |
|-----------|---------|---------------------|-------------|
| AXL       | c.2425G>A (p.E809K) | MISSENSE         |
| AR        | c.1472C>T (p.A491V)  | MISSENSE        |
| ABCB1     | c.2246G>A (p.R749Q)  | MISSENSE        |
| ERCC5     | c.2502T>G (p.Y834*)  | STOP GAINED     |
| GRM8      | c.1502A>G (p.D501G)  | MISSENSE        |
| CTNNB1    | c.269G>A (p.R90Q)    | MISSENSE        |
| BTK       | c.1469G>A (p.R490H)  | MISSENSE        |
| FANCD2    | c.1092G>A (p.Q364*)  | STOP GAINED     |
| ERBB4     | c.2584T>G (p.F862V)  | MISSENSE        |
| NTRK1     | c.1237G>A (p.E413K)  | MISSENSE        |
| CYP2A6    | c.821G>A (p.R274H)   | MISSENSE        |
| SMAD2     | c.448G>A (p.E150K)   | MISSENSE        |
| TPMT      | c.487C>T (p.R163C)   | MISSENSE        |
| ERBB2IP   | c.2455G>A (p.V819I)  | MISSENSE        |
| RAD50     | c.3880G>A (p.D1294N) | MISSENSE        |
| ATM       | c.3980T>G (p.L1327*) | STOP GAINED     |
| RAD51C    | c.550G>A (p.A184T)   | MISSENSE        |
| FGFR3     | c.148G>A (p.V50I)    | MISSENSE        |
| FGFR1     | c.2461C>T (p.R821C)  | MISSENSE        |
| RAF1      | c.200G>T (p.R67L)    | MISSENSE        |
| PIK3CA    | c.3044G>A (p.S1015Y) | MISSENSE        |
| BMPR1A    | c.531-1G>T          | SPLICE          |
| MSH2      | c.1289A>T (p.K430I)  | MISSENSE        |
| LRP1B     | c.9912C>A (p.F3304L) | MISSENSE        |
| FAT1      | c.11180G>T (p.G3727V)| MISSENSE        |
| ATR       | c.2770A>C (p.S924R)  | MISSENSE        |
| MTOR      | c.4348T>G (p.Y1450D) | MISSENSE        |
| BRCA1     | c.1024C>T (p.L342M)  | MISSENSE        |
| MAP3K1    | c.2759T>G (p.L920W)  | MISSENSE        |
| TGFBR2    | c.1234G>T (p.D412Y)  | MISSENSE        |
| DPYD      | c.964T>C (p.C322R)   | MISSENSE        |
| PKHD1     | c.527G>T (p.S176I)   | MISSENSE        |
| KMT2B     | c.7807G>T (p.E2603*) | STOP GAINED     |
| CRKL      | c.737G>A (p.R246K)   | MISSENSE        |
| FGFR4     | c.787G>T (p.V263L)   | MISSENSE        |
| ESR1      | c.988G>A (p.E330K)   | MISSENSE        |
| FBXW7     | c.7C>T (p.Q3*)       | STOP GAINED     |
| LRP1B     | c.2095G>A (p.G699S)  | MISSENSE        |
| TUBB3     | c.1141A>T (p.I381F)  | MISSENSE        |
| IGF1R     | c.722C>T (p.A241V)   | MISSENSE        |
| ERCC4     | c.1444G>C (p.E482Q)  | MISSENSE        |
| KMT2B     | c.6661C>T (p.P2221S) | MISSENSE        |
| PDGFRA    | c.248C>T (p.T83M)    | MISSENSE        |
| AXL       | c.1642C>G (p.Q548E)  | MISSENSE        |
| TP53      | c.499C>T (p.Q167*)   | STOP GAINED     |
| ABCB1     | c.1350+2T>A          | SPLICE          |
| Gene   | Description                          | Mutation                           | Type         |
|--------|--------------------------------------|------------------------------------|--------------|
| FANCF  |                                     | c.187C>T(p.H63Y)                   | MISSENSE    |
| BRAF   |                                     | c.1799T>A(p.V600E)                 | MISSENSE    |
| IDH1   |                                     | c.719A>G(p.E240G)                  | MISSENSE    |
| POLD1  |                                     | c.829C>G(p.L277V)                  | MISSENSE    |
| FAT1   |                                     | c.12497_13138+1533del             | LARGE FRAGMENT D |
| TUBB3  |                                     |                                    | Amplication |
| PKHD1  |                                     | c.1991G>A(p.W664*)                 | STOP GAINED |
| DENND1A|                                     | c.1426G>C(p.V476L)                 | MISSENSE    |
| GRIN2A |                                     | c.237delC(p.K80Rfs*30)             | FRAMESHIFT  |
| EXT1   |                                     | c.652_962+12delinsCC             | SPLICE      |
| CDKN1B |                                     |                                    | Deletion    |
| FLT3   |                                     |                                    | Amplication |
| PTPRD  |                                     |                                    | Deletion    |
| MEN1   |                                     |                                    | Deletion    |
| PRKCI  |                                     | c.1438C>T(p.R480C)                 | MISSENSE    |
| APC    |                                     | c.1495C>T(p.R499*)                 | STOP GAINED |
| SMO    |                                     | c.430C>T(p.R144C)                  | MISSENSE    |
| NQO1   |                                     | c.359T>A(p.V120E)                  | MISSENSE    |
| KRAS   |                                     | c.35G>A(p.G12D)                    | MISSENSE    |
| AMER1  |                                     | c.1183G>T(p.E395*)                 | STOP GAINED |
| PREX2  |                                     | c.39C>A(p.S13R)                    | MISSENSE    |
| TPS3   |                                     | c.532C>G(p.H178D)                  | MISSENSE    |
| SMAD4  |                                     | c.956_965dupCCTAT/FRAMESHIFT      |             |
| APC    |                                     | c.3904delC(p.L1302Cfs*FRAMESHIFT  |             |
| SMARCA4|                                     | c.1538G>A(p.R513Q)                 | MISSENSE    |
| ERBB3  |                                     | c.1921C>G(p.H641D)                 | MISSENSE    |
| TP53   |                                     | c.707A>G(p.Y236C)                  | MISSENSE    |
| ERBB3  |                                     | c.310G>A(p.V104M)                  | MISSENSE    |
| GNAS   |                                     | c.1163C>T(p.A388V)                 | MISSENSE    |
| SETBP1 |                                     | c.3233C>T(p.T1078M)                | MISSENSE    |
| APC    |                                     | c.4616C>A(p.S1539*)                | STOP GAINED |
| LHCGR  |                                     | c.459-1G>C                        | SPLICE      |
| TP53   |                                     | c.1024C>T(p.R342*)                 | STOP GAINED |
| TP53   |                                     | c.734G>T(p.G245V)                  | MISSENSE    |
| NRG1   |                                     | c.1757G>T(p.R586I)                 | MISSENSE    |
| SMAD4  |                                     | c.739G>T(p.G247*)                  | STOP GAINED |
| ATM    |                                     | c.829G>T(p.E277*)                  | STOP GAINED |
| SMAD4  |                                     |                                    | Deletion    |
| DLL3   |                                     | c.133G>T(p.A45S)                   | MISSENSE    |
| SMAD4  |                                     |                                    | Deletion    |
| MEN1   |                                     |                                    | Deletion    |
| TP53   |                                     | c.481G>A(p.A161T)                  | MISSENSE    |
| MEN1   |                                     | c.1012C>G(p.L338V)                 | MISSENSE    |
| APC    |                                     | c.637C>T(p.R213*)                  | STOP GAINED |
| LRP1B  |                                     | c.10057+1G>A                      | SPLICE      |
| ATM    |                                     | c.979G>A(p.G327R)                  | MISSENSE    |
| APC    |                                     | c.4298delC(p.P1433Qfs*FRAMESHIFT  |             |
P15  TP53  Deletion
P15  TP53  Deletion
P15  RECQL4  Amplification
P16  MYC  Amplification
P16  APC  c.4351G>T(p.E1451*)  STOP GAINED
P16  TP53  c.817C>T(p.R273C)  MISSENSE
P16  AMER1  c.519dupT(p.S174*)  FRAMESHIFT
P16  FLT4  c.2287G>A(p.V763M)  MISSENSE
P16  PPARD  c.170A>G(p.Q57R)  MISSENSE
P16  MYC  Amplification
P17  ALK  c.389G>A(p.G130D)  MISSENSE
P17  KRAS  c.351A>T(p.K117N)  MISSENSE
P17  GRM3  c.1114G>A(p.V371I)  MISSENSE
P17  DOT1L  c.1391C>A(p.P464H)  MISSENSE
P17  FAT1  c.1645C>G(p.R549G)  MISSENSE
P17  TP53  c.742C>T(p.R248W)  MISSENSE
P17  KIT  c.1415T>C(p.L472P)  MISSENSE
P17  MRE11A  c.233T>C(p.L78S)  MISSENSE
P17  GNAS  c.601C>T(p.R201C)  MISSENSE
P17  CYP2D6  c.994G>A(p.E332K)  MISSENSE
P17  ATRX  c.5831G>A(p.S1944N)  MISSENSE
P17  PRDM1  c.236C>T(p.A79V)  MISSENSE
P17  DPYD  c.2906A>G(p.Q969R)  MISSENSE
P17  KRAS  c.182A>G(p.Q61R)  MISSENSE
P17  TP53  Deletion
P17  MYC  Amplification
P18  APC  c.2863G>T(p.E955*)  STOP GAINED
P18  RET  c.2498G>A(p.R833H)  MISSENSE
P18  IGF1R  Amplification
P18  ZNF703  Amplification
P18  APC  c.4313delC(p.T1438Nfs)  FRAMESHIFT
P18  FBXW7  c.1122+1G>C  SPLICE
P18  TP53  c.743G>A(p.R248Q)  MISSENSE
P18  KRAS  c.35G>A(p.G12D)  MISSENSE
P18  TP53  Deletion
P18  MYC  Amplification
P18  ZNF703  Amplification
P18  RECQL4  Amplification
P19  APC  c.3907C>T(p.Q1303*)  STOP GAINED
P19  NFE2L2  c.1346G>A(p.R449H)  MISSENSE
P19  TP53  c.637C>T(p.R213*)  STOP GAINED
P19  GNAS  Amplification
P20  BRCA2  c.2649G>G(p.F883L)  MISSENSE
P20  ZNF703  c.698A>G(p.N233S)  MISSENSE
P20  TP53  c.721delT(p.S241Pfs*6)  FRAMESHIFT
P20  BLM  c.1959G>T(p.K653N)  MISSENSE
| Chromosome | Gene   | Exon | Mutation | Effect   |
|------------|--------|------|----------|----------|
| P20        | CYP2A6 | c.1035C>A  | p.D345E  | MISSENSE |
| P20        | LRP1B  | c.2380G>T  | p.G794C  | MISSENSE |
| P20        | APC    | c.4031C>A  | p.S1344* | STOP GAINED |
| P21        | APC    | c.2938A>T  | p.K980*  | STOP GAINED |
| P21        | TP53   | c.527G>T   | p.C176F  | MISSENSE |
| P21        | ERBB3  | c.310G>A   | p.V104M  | MISSENSE |
| P21        | APC    | c.4354delG| p.V1452Yfs | FRAMESHIFT |
| P21        | PBRM1  | c.862G>T   | p.E288*  | STOP GAINED |
| P22        | PDCD1  | c.787G>A   | p.A263T  | MISSENSE |
| P22        | SRC    |          |          | Amplification |
| P22        | BMPR1A |          |          | Deletion |
| P22        | KEAP1  | c.274C>A   | p.Q92K   | MISSENSE |
| P22        | KRAS   | c.35G>C    | p.G12A   | MISSENSE |
| P22        | APC    | c.694C>T   | p.R232*  | STOP GAINED |
| P22        | PTEN   |          |          | Deletion |
| P22        | SMAD4  |          |          | Deletion |
| P22        | APC    | c.2054G>A  | p.W685*  | STOP GAINED |
| P22        | TOP1   |          |          | Amplification |
| P22        | TP53   | c.524G>A   | p.R175H  | MISSENSE |
| P22        | TP53   |          |          | Deletion |
| P22        | SRC    |          |          | Amplification |
| P22        | TOP1   |          |          | Amplification |
| P22        | SMAD4  |          |          | Deletion |
| P22        | BMPR1A |          |          | Deletion |
| P22        | PTEN   |          |          | Deletion |
| P22        | SMAD2  |          |          | Deletion |
| P22        | MAX    |          |          | Deletion |
| P22        | RAD51B |          |          | Deletion |
| P22        | SMAD3  |          |          | Deletion |
| P22        | PDK1   |          |          | Amplification |
| P23        | TP53   | c.256_257delGC | p.A86| FRAMESHIFT |
| P23        | MITF   | c.1019C>T  | p.T340I  | MISSENSE |
| P23        | KRAS   | c.38G>A    | p.G13D   | MISSENSE |
| P23        | ERCC5  | c.182G>A   | p.R61Q   | MISSENSE |
| P23        | APC    | c.2397T>G   | p.Y999*  | STOP GAINED |
| P24        | CDK8   | c.647-1G>T |          | SPLICE |
| P24        | APC    | c.1495C>T   | p.R499*  | STOP GAINED |
| P24        | MLH1   |          |          | Deletion |
| P24        | SMAD4  |          |          | Deletion |
| P24        | LRP1B  | c.13610C>T  | p.A4537V | MISSENSE |
| P24        | APC    | c.4108A>T   | p.K1370* | STOP GAINED |
| P24        | TP53   | c.821T>C   | p.V274A  | MISSENSE |
| P24        | TSC2   | c.3257G>T   | p.G1086V | MISSENSE |
| P24        | SMAD4  |          |          | Deletion |
| P24        | MLH1   |          |          | Deletion |
| P25        | BRAF   | c.1799T>A   | p.V600E  | MISSENSE |
| P25        | TP53   | c.841G>C   | p.D281H  | MISSENSE |
RNF43  c.143T>A(p.I48N)   MISSENSE
TP53   c.733G>A(p.G245S)   MISSENSE
GRIN2A c.526_534dupATCTTCC INFRAME INDEL
PKHD1  c.5134G>A(p.G1712R) MISSENSE
APC    c.4132C>T(p.Q1378*) STOP GAINED
FBXW7  c.1810A>T(p.K604*)  STOP GAINED
EPHA5  c.1364G>A(p.R455Q)  MISSENSE
APC    c.690_696dupTATAAG# FRAMESHIFT
PIK3CA c.1633G>A(p.E545K)  MISSENSE
ARID2  c.278dupA(p.Y93*)   STOP GAINED
NF1    c.1431delT(p.F477Lfs*2 FRAMESHIFT
ARID2  ARID2:exon15~IGR (don FUSION
CREBBP c.3307C>T(p.R1103*) STOP GAINED
PRKDC  c.7259C>T(p.S2420L) MISSENSE
KMT2A  c.5675A>G(p.Y1892C) MISSENSE
NF1    c.2033dupC(p.I679Dfs* FRAMESHIFT
ERBB3  c.850G>A(p.G284R)  MISSENSE
KRAS   c.35G>T(p.G12V)    MISSENSE
NTRK3  c.1933C>T(p.R645C) MISSENSE
PIK3CA c.1633G>A(p.E545K) MISSENSE
SMAD3  c.277C>T(p.R93*)   STOP GAINED
KRAS   c.34G>A(p.G12S)   MISSENSE
SMAD2  c.388C>T(p.R130*)  STOP GAINED
CHD8   c.3318A>G(p.E1106D) MISSENSE
ARID2  c.622G>A(p.G208R)  MISSENSE
APC    c.4467_4471dupACATT FRAMESHIFT
TP53   c.461G>T(p.G154V)  MISSENSE
APC    c.1495C>T(p.R499*) STOP GAINED
JARID2 c.2312G>T(p.R771H) MISSENSE
IGF1R  c.928G>A(p.G310S) MISSENSE
SDHD   Deletion
PKHD1  c.1302A>T(p.E434D) MISSENSE
AR     c.2306T>A(p.L769Q) MISSENSE
SMAD4  Deletion
TP53   c.638G>C(p.R213P)  MISSENSE
BRAF   c.823G>A(p.E275K)  MISSENSE
SOX2   c.859G>A(p.A287T)  MISSENSE
DOT1L  c.2927C>T(p.A976V) MISSENSE
APC    c.2932C>T(p.Q978*) STOP GAINED
HGF    c.1048C>T(p.R350*) STOP GAINED
KRAS   c.436G>A(p.A146T)  MISSENSE
SMAD4  Deletion
AXIN2  Deletion
FBXW7  Deletion
IL7R   Amplification
APC    c.2821G>T(p.E941*) STOP GAINED
PARK2  c.1061G>A(p.G354E) MISSENSE
| Gene  | Mutation          | Type          |
|-------|-------------------|---------------|
| TOP1  | Amplification     |               |
| SRC   | Amplification     |               |
| APC   | c.1409-2A>G       | SPLICE        |
| ZNF217| Amplification     |               |
| LRP1B | c.5016A>C(p.E1672D) | MISSENSE    |
| FAT1  | c.10353A>C(p.E3451D) | MISSENSE    |
| ARID1B| c.59G>A(p.G20D)   | MISSENSE      |
| CHEK1 | c.1115G>A(p.R372Q) | MISSENSE      |
| BAP1  | c.1289G>C(p.S430T) | MISSENSE      |
| TP53  | c.742C>T(p.R248W) | MISSENSE      |
| GNAS  | Amplification     |               |
| EPHA5 | c.488G>T(p.G163V) | MISSENSE      |
| ATM   | c.1009C>T(p.R337C) | MISSENSE      |
| PKHD1 | c.1946C>T(p.T649M) | MISSENSE      |
| TSC2  | c.1459dupT(p.S487Ffs* | FRAMESHIFT  |
| APC   | c.3944C>A(p.S1315*) | STOP GAINED  |
| TP53  | c.814G>T(p.V272L) | MISSENSE      |
| TP53  | c.158G>A(p.W53*)  | STOP GAINED   |
| FBXW7 | c.832C>T(p.R278*) | STOP GAINED   |
| APC   | c.4666dupA(p.T1556Nfs | FRAMESHIFT  |
| GATA4 | c.770C>T(p.P257L) | MISSENSE      |
| REClQ4| c.654_655delACinsTT | MISSENSE     |
| PDGFRB| c.1998C>A(p.N666K) | MISSENSE      |
| MAP3K1| c.2512T>A(p.L838I) | MISSENSE      |
| KRAS  | c.38G>A(p.G13D)   | MISSENSE      |
| PGR   | PGR:exon4~IGR (downs | FUSION       |
| MITF  | c.124G>A(p.G42R)  | MISSENSE      |
| MED12 | c.514G>A(p.E172K) | MISSENSE      |
| SOX2  | c.419C>T(p.A140V) | MISSENSE      |
| KRAS  | c.355G>T(p.G12V)  | MISSENSE      |
| GNAS  | Amplification     |               |
| GATA3 | c.619G>A(p.A207T) | MISSENSE      |
| TP53  | c.735G>A(p.G245S) | MISSENSE      |
| APC   | c.3904delC(p.L1302Cfs* | FRAMESHIFT  |
| FLCN  | c.1285dupC(p.H429Pfs* | FRAMESHIFT  |
| GNAS  | Amplification     |               |
| ERBB2 | c.2524G>A(p.V842I) | MISSENSE      |
| SMAD3 | c.1102C>T(p.R368*) | STOP GAINED   |
| TERT  | c.1358G>A(p.R453H) | MISSENSE      |
| APC   | c.4473delT(p.F1491Lfs* | FRAMESHIFT  |
| LRP1B | c.2962G>A(p.D988N) | MISSENSE      |
| KRAS  | c.355G>A(p.G12D)  | MISSENSE      |
| TP53  | c.578A>T(p.H193L) | MISSENSE      |
| ARID1A| c.2720C>G(p.S907C) | MISSENSE      |
| CTNNB1| c.832G>A(p.G278R) | MISSENSE      |
| CHEK2 | c.283C>T(p.R95*)  | STOP GAINED   |
| TP53  | c.743G>A(p.R248Q) | MISSENSE      |
| Chromosome | Gene   | Mutation | Description         |
|------------|--------|----------|---------------------|
| P37        | APC    | c.4312delA(p.T1438Hfs) | FRAMESHIFT         |
| P37        | KRAS   | c.35G>A(p.G12D)         | MISSENSE           |
| P37        | APC    | c.3502G>T(p.E1168*)    | STOP GAINED        |
| P37        | RET    | c.2906G>A(p.R969Q)     | MISSENSE           |
| P37        | B2M    | c.106G>T(p.E36*)       | STOP GAINED        |
| P38        | CHD4   | c.5720A>G(p.Q1907R)    | MISSENSE           |
| P38        | JARID2 | c.1186dupG(p.A396Gfs)  | FRAMESHIFT         |
| P38        | IGF1R  | c.95-2A>G              | SPLICE             |
| P38        | EPHA3  | c.649C>T(p.P2175)      | MISSENSE           |
| P38        | IGF1R  | c.35G>A(p.G12D)        | MISSENSE           |
| P38        | KMT2D  | c.4168delG(p.A1390Qfs) | FRAMESHIFT         |
| P38        | TERT   | c.3032G>T(p.R1011M)    | MISSENSE           |
| P38        | THADA  | c.2993G>A(p.R998Q)     | MISSENSE           |
| P38        | IDH1   | c.664C>T(p.R222C)      | MISSENSE           |
| P38        | NBN    | c.1396delA(p.R466Gfs)  | FRAMESHIFT         |
| P38        | ARID1A | c.5548dupG(p.D1850Gf)  | FRAMESHIFT         |
| P38        | TGFBR2 | c.382_383delAA(p.K128fs) | FRAMESHIFT    |
| P38        | BTK    | c.843G>A(p.W281*)      | STOP GAINED        |
| P38        | B2M    | c.68-2A>G              | SPLICE             |
| P38        | POLD1  | c.644C>T(p.A215V)      | MISSENSE           |
| P38        | MED12  | c.4070G>A(p.R1357H)    | MISSENSE           |
| P38        | PRSS1  | c.93G>T(p.E31D)        | MISSENSE           |
| P38        | PTCH1  | c.474G>A(p.M158I)      | MISSENSE           |
| P38        | FANCC  | c.554G>A(p.R185Q)      | MISSENSE           |
| P38        | SMARCA4| c.326delC(p.P109Rfs)   | FRAMESHIFT         |
| P38        | EPHA3  | c.369C>A(p.Y123*)      | STOP GAINED        |
| P38        | KMT2A  | c.5665C>T(p.R1889C)    | MISSENSE           |
| P38        | AKT1   | c.652C>A(p.Q218K)      | MISSENSE           |
| P38        | PAK3   | c.413T>C(p.M138T)      | MISSENSE           |
| P38        | EPHA2  | c.1952G>A(p.G651D)     | MISSENSE           |
| P38        | PIK3CA | c.3140A>G(p.H1047R)    | MISSENSE           |
| P38        | TSHR   | c.290_292delTCT(p.F97) | INFRAME INDEL      |
| P38        | RUNX1T1| c.1069C>T(p.R357W)     | MISSENSE           |
| P38        | TP53   | c.524G>A(p.R175H)      | MISSENSE           |
| P38        | MECOM  | c.1839delA(p.G614Efs)  | FRAMESHIFT         |
| P38        | RNF43  | c.2136_2143delAGAAA    | FRAMESHIFT         |
| P38        | BRCA2  | c.6539dupT(p.L2180Ffs) | FRAMESHIFT         |
| P38        | DNMT3A | c.2311C>T(p.R771*)     | STOP GAINED        |
| P38        | CHD8   | c.7543G>T(p.G2515C)    | MISSENSE           |
| P38        | TERT   | c.1453C>T(p.R485C)     | MISSENSE           |
| P38        | PLCB4  | c.1536delC(p.E513Nfs)  | FRAMESHIFT         |
| P38        | RAD50  | c.2164_2165delAA(p.K1) | FRAMESHIFT         |
| P38        | APC    | c.1600C>T(p.R554*)     | STOP GAINED        |
| P38        | GRIN2A | c.1310G>A(p.R437Q)     | MISSENSE           |
| P38        | FLT4   | c.491G>A(p.G164D)      | MISSENSE           |
| P38        | MEN1   | c.1310C>T(p.A437V)     | MISSENSE           |
| P38        | TSC1   | c.3127_3129dupAGC(p. INFRAME INDEL |
| Gene     | Mutation                      | Type            |
|----------|-------------------------------|-----------------|
| ARAF     | c.23delC(p.P8Lfs*26)          | FRAMESHIFT     |
| BAX      | c.265delC(p.R89Efs*44)        | FRAMESHIFT     |
| TTF1     | c.821delA(p.K274fs*1)         | FRAMESHIFT     |
| BAX      | c.121delG(p.E41Rfs*19)        | FRAMESHIFT     |
| BUB1B    | c.2996G>A(p.R999Q)            | MISSENSE       |
| PBRM1    | c.1605G>T(p.E535D)            | MISSENSE       |
| NRAS     | c.34G>T(p.G12C)               | MISSENSE       |
| GRIN2A   | c.391G>A(p.A131T)             | MISSENSE       |
| KMT2B    | c.5159T>C(p.L1720S)           | MISSENSE       |
| PIK3R1   | c.907C>T(p.P303S)             | MISSENSE       |
| THADA    | c.483T>A(p.N161K)             | MISSENSE       |
| GATA6    | c.996_998dupCCA(p.H31)        | INFRAME INDEL  |
| APC      | c.3709_3710delCA(p.Q114fs*2)  | FRAMESHIFT     |
| KMT2B    | c.6895delC(p.R2299Gfs)        | FRAMESHIFT     |
| ERCC4    | c.1024delA(p.R342Gfs)         | FRAMESHIFT     |
| NBN      | c.2232delT(p.F744Lfs*7)       | FRAMESHIFT     |
| APC      | c.1742delA(p.K581Rfs*)        | FRAMESHIFT     |
| TP53     | c.1085G>A(p.S362N)            | MISSENSE       |
| RAF1     | c.779C>T(p.T260I)             | MISSENSE       |
| TOP2A    | c.4303delA(p.R1435Gfs)        | FRAMESHIFT     |
| SLC3A2   | c.899delA(p.K300Rfs*3)        | FRAMESHIFT     |
| EPA51    | c.2542G>A(p.V848M)            | MISSENSE       |
| POLD1    | c.1922C>A(p.P641H)            | MISSENSE       |
| PIK3R1   | c.1344delA(p.K448Nfs)         | FRAMESHIFT     |
| SOS1     | c.1705C>A(p.L569M)            | MISSENSE       |
| ARID2    | c.1767T>A(p.N589K)            | MISSENSE       |
| RET      | c.2161C>T(p.R721W)            | MISSENSE       |
| PALLD    | c.2756A>G(p.D919G)            | MISSENSE       |
| PTCH1    | c.3606delC(p.S1203Afs)        | FRAMESHIFT     |
| KMT2B    | c.7795delG(p.E2599Gfs)        | FRAMESHIFT     |
| PRDM1    | c.1571C>T(p.T524M)            | MISSENSE       |
| RECLQ4   | c.645G>T(p.E215D)             | MISSENSE       |
| GSTT1    | c.566C>T(p.P189L)             | MISSENSE       |
| SMAD2    | c.524delT(p.L175Cfs*5)        | FRAMESHIFT     |
| MSH6     | c.3261dupC(p.F1088Lfs)        | FRAMESHIFT     |
| PREX2    | c.2715+1G>A                  | SPLICE         |
| TP53     | c.733G>A(p.G245S)             | MISSENSE       |
| DNMT3A   | c.81G>T(p.E27D)               | MISSENSE       |
| DDR2     | c.2507C>T(p.R1837M)           | MISSENSE       |
| QKI      | c.401delA(p.K134Rfs*1)        | FRAMESHIFT     |
| SOCS1    | c.150delC(p.G51Afs*34)        | FRAMESHIFT     |
| NSD1     | c.4151G>T(p.R1384L)           | MISSENSE       |
| CHD8     | c.3478C>T(p.R1160C)           | MISSENSE       |
| RNF43    | c.1976delG(p.G659Vfs*34)      | FRAMESHIFT     |
| TP53     | c.733G>A(p.G245S)             | MISSENSE       |
| APC      | c.4099C>T(p.Q1367*)           | STOP GAINED    |
| LHCGR    | c.1613C>T(p.A538V)            | MISSENSE       |
P40  BTG2  c.403C>A(p.L135I)  MISSENSE
P40  TUBB3  c.772G>A(p.V258M)  MISSENSE
P40  CHD8  c.2827C>T(p.R943C)  MISSENSE
P40  CTNNB1  c.673C>T(p.R225C)  MISSENSE
P40  RECQL4  c.2637delC(p.S880Qfs*)  FRAMESHIFT
P40  FBXW7  c.1810A>G(p.K604E)  MISSENSE
P40  GNAS  c.1792C>T(p.R598C)  MISSENSE
P40  CREBBP  c.3631_3632delTT(p.L1143fs)  FRAMESHIFT
P40  CBL  c.1852C>T(p.H618Y)  MISSENSE
P40  EP300  c.1992G>T(p.M664I)  MISSENSE
P40  NOTCH2  c.1862G>A(p.R621H)  MISSENSE
P40  TNFAIP3  c.2274delC(p.K759fs)*1  FRAMESHIFT
P40  STK11  c.644G>A(p.G215D)  MISSENSE
P40  FGFR19  c.313G>A(p.A105T)  MISSENSE
P40  BAP1  c.1850G>T(p.R617M)  MISSENSE
P40  NOTCH1  c.7475C>T(p.S2492L)  MISSENSE
P40  SUFU  c.71delG(p.R119fs)  FRAMESHIFT
P40  RPTOR  c.3439G>A(p.V1147I)  MISSENSE
P40  GNAS  c.1066C>T(p.R356C)  MISSENSE
P40  SDHB  c.427G>T(p.R141V)  MISSENSE
P40  IRF2  c.893C>A(p.P298Q)  MISSENSE
P40  GATA6  c.572C>A(p.T191N)  MISSENSE
P40  PPARD  c.856G>A(p.V286M)  MISSENSE
P40  FOXA1  c.1034delG(p.G345Afs*)  FRAMESHIFT
P40  MET  c.1235G>A(p.R412H)  MISSENSE
P40  JARID2  c.1272delG(p.R425fs)  FRAMESHIFT
P40  SETD2  c.4219delA(p.R1407fs)  FRAMESHIFT
P40  BRCA2  c.1813dupA(p.I605Nfs)  FRAMESHIFT
P40  STAT3  c.1013T>C(p.V338A)  MISSENSE
P40  JAK1  c.1594C>T(p.R532C)  MISSENSE
P40  JAK1  c.1289delC(p.P430Rfs)  FRAMESHIFT
P40  FAT1  c.8799delA(p.G2934Vfs)  FRAMESHIFT
P40  PDCD1  c.105dupC(p.T36Hfs*70)  FRAMESHIFT
P40  KDM5A  c.3649C>T(p.R1217W)  MISSENSE
P40  TOP2A  c.3304G>A(p.E1102K)  MISSENSE
P40  FGFR4  c.1944+2T>C  SPLICE
P40  UGT1A1  c.1558A>G(p.K520E)  MISSENSE
P40  TNFAIP3  c.1805C>T(p.T602M)  MISSENSE
P40  FGFR3  c.1637C>T(p.T546M)  MISSENSE
P40  MCL1  c.328_330delGAG(p.E111fs)  INFRAME INDEL
P40  BAX  c.121delG(p.E41Rfs*19)  FRAMESHIFT
P40  APC  c.2369_2370delGA(p.R794fs)  FRAMESHIFT
P40  PGR  c.1699dupT(p.C567Lfs)  FRAMESHIFT
P40  APC  c.694G>A(p.A232T)  STOP GAINED
P40  NOTCH2  c.3461C>T(p.A1154V)  MISSENSE
P40  NBN  c.1066G>A(p.A356T)  MISSENSE
P40  ROS1  c.1165G>A(p.V389I)  MISSENSE
| Gene   | Variant | Mutation Description   | Class     |
|--------|---------|------------------------|-----------|
| KRAS  | c.38G>A | (p.G13D)              | MISSENSE  |
| RAD54L| c.1718G>A| (p.S573N)            | MISSENSE  |
| DENND1A| c.2783G>A| (p.R928H)             | MISSENSE  |
| FANCF | c.265T>C | (p.C89R)              | MISSENSE  |
| PIK3CA| c.2189T>C| (p.V730A)             | MISSENSE  |
| TGFBR2| c.382_383delAA| (p.K128Fs*1)  | FRAMESHIFT|
| FGFR3 | c.1931A>G | (p.V730A)           | MISSENSE  |
| MLH3  | c.1755dupA| (p.E586Rfs*1)      | FRAMESHIFT|
| SKP2  | c.686dupA| (p.N229Kfs*1)        | FRAMESHIFT|
| ARID1A| c.827delG| (p.G276Efs*8)        | FRAMESHIFT|
| CBL   | c.2389A>G| (p.S797G)            | MISSENSE  |
| FAT1  | c.223G>A | (p.V73I)              | MISSENSE  |
| GATA6 | c.767C>T | (p.A256V)             | MISSENSE  |
| TTF1  | c.821dupA| (p.S275Vfs*2)        | FRAMESHIFT|
| PDE11A| c.1865C>T| (p.A622V)             | MISSENSE  |
| ARID1A| c.488C>T | (p.A163V)             | MISSENSE  |
| FANCM | c.4005delA| (p.V1336Lfs*1)   | FRAMESHIFT|
| PTCH1 | c.3921delC| (p.R1308Efs*1)    | FRAMESHIFT|
| KDM5A | c.3597delA| (p.G1200Dfs*1)     | FRAMESHIFT|
| DICER1| c.5186C>T| (p.P1729L)            | MISSENSE  |
| RAD50 | c.1504delA| (p.M502Wfs*1)     | FRAMESHIFT|
| LRP1B | c.5584A>G| (p.T1862A)            | MISSENSE  |
| DNMT3A| c.1742G>T| (p.W581L)            | MISSENSE  |
| THADA | c.3411G>C| (p.Q1137H)           | MISSENSE  |
| MAP3K4| c.925G>A | (p.A309T)             | MISSENSE  |
| TGFB2 | c.382_383delAA| (p.K128Fs*1) | FRAMESHIFT|
| MSH2  | c.746delA| (p.K249Rfs*5)        | FRAMESHIFT|
| BRCA2 | c.7791delA| (p.E2598Kfs*1)    | FRAMESHIFT|
| B2M   | c.41_44delCTCT| (p.S14F)  | FRAMESHIFT|
| FAT1  | c.2T>C | (p.M1?)               | START LOST|
| EPHA5 | c.466T>G | (p.F156V)             | MISSENSE  |
| CREBBP| c.6745C>T| (p.R2249C)            | MISSENSE  |
| DICER1| c.2810G>A| (p.R937H)            | MISSENSE  |
| HGF   | c.1999G>T| (p.G667E*)           | STOP GAINED|
| MAP3K4| c.2269C>T| (p.R757C)            | MISSENSE  |
| HGF   | c.800C>T| (p.P267L)             | MISSENSE  |
| NOTCH1| c.2558_2560delTCT| (p.F156V) | INFRAME INDEL|
| PMS2  | c.1239delA| (p.D1414Tfs*1)      | FRAMESHIFT|
| BRD4  | c.118G>A | (p.A40T)              | MISSENSE  |
| APC   | c.637C>T| (p.R213*)            | STOP GAINED|
| ERCC5 | c.2964+1G>A| (p.G667E*) | STOP GAINED|
| INPP4B| c.2621G>A| (p.R874Q)            | MISSENSE  |
| ATR   | c.4456A>G| (p.N1486D)           | MISSENSE  |
| TP53  | c.817C>T| (p.R273C)             | MISSENSE  |
| CUX1  | c.2705G>A| (p.R902H)            | MISSENSE  |
| RRM1  | c.1985G>A| (p.C662Y)            | MISSENSE  |
| B2M   | c.43_44delCTCT| (p.L15Ffs*1) | FRAMESHIFT|
| Gene   | Description          | Mutation                  |
|--------|----------------------|---------------------------|
| JARID2 | c.1272delG(p.R425Gfs*) | FRAMESHIFT               |
| APC    | c.4396G>T(p.G1466*)   | STOP GAINED              |
| CHD4   | c.223-1G>A           | SPLICE                    |
| ERBB4  | c.215G>A(p.R72Q)     | MISSENSE                  |
| RRM1   | c.2052G>T(p.W684C)   | MISSENSE                  |
| ARID1A | c.3281dupA(p.Q1095Af) | FRAMESHIFT               |
| B1     | c.219_220dupAG(p.A74) | FRAMESHIFT               |
| TET2   | c.1106G>A(p.R369Q)   | MISSENSE                  |
| CDC73  | c.1537C>T(p.R513W)   | MISSENSE                  |
| MLH1   | c.839A>G(p.Y280C)    | MISSENSE                  |
| EP300  | c.6490delC(p.Q2164Rfs) | FRAMESHIFT               |
| BAX    | c.121delG(p.E41Rfs*19) | FRAMESHIFT               |
| CTCF   | c.610dupA(p.T204Nfs*); | FRAMESHIFT               |
| SLC3A2 | c.899delA(p.K300Rfs*3) | FRAMESHIFT               |
| KRAS   | c.38G>A(p.G13D)      | MISSENSE                  |
| FANCI  | c.2565A>G(p.I855M)   | MISSENSE                  |
| FLNC   | c.1285delC(p.H429Tfs*) | FRAMESHIFT               |
| KMT2B  | c.3159delG(p.R1055Gfs) | FRAMESHIFT               |
| AXIN2  | c.1994delG(p.G665Afs*) | FRAMESHIFT               |
| KRAS   |                        |                           |
| BMPR1A |                        |                           |
| ZNF703 |                        |                           |
| KMT2B  |                        |                           |
| CSF1R  | c.2881C>T(p.Q961*)   | STOP GAINED              |
| NSD1   | c.1894C>T(p.R632*)   | STOP GAINED              |
| TP53   | c.1024C>T(p.R342*)   | STOP GAINED              |
| MET    | c.3856G>T(p.D1286Y)  | MISSENSE                  |
| WRN    | c.2569C>T(p.R857C)   | MISSENSE                  |
| DICER1 | c.2930A>G(p.N977S)   | MISSENSE                  |
| KMT2B  | c.7907_7908delTT(p.F2) | FRAMESHIFT               |
| FGFR1  |                        |                           |
| FGFR1  |                        |                           |
| RB1    | c.1253G>C(p.R418T)   | MISSENSE                  |
| MYC    |                        |                           |
| PTK2   |                        |                           |
| PTEN   |                        |                           |
| TP53   |                        |                           |
| MET    |                        |                           |
| WRN    |                        |                           |
| DICER1 |                        |                           |
| KMT2B  |                        |                           |
| FGFR1  |                        |                           |
| FGFR1  |                        |                           |
| RB1    |                        |                           |
| MYC    |                        |                           |
| PTK2   |                        |                           |
| PTEN   |                        |                           |
| BMPR1A |                        |                           |
| RECQL4 |                        |                           |
| SMAD2  |                        |                           |
| APC    | c.2589C>A(p.Y863*)   | STOP GAINED              |
| Gene       | Mutation          | Type     |
|------------|-------------------|----------|
| ARID1A     | c.529C>T(p.Q177*) | STOP GAINED |
| PALLD      | c.3214C>T(p.Q1072*) | STOP GAINED |
| KRAS       | c.35G>A(p.G12D)   | MISSENSE |
| FANCM      | c.5135C>A(p.S1712Y) | MISSENSE |
| ERBB3      | c.179T>A(p.M60K)  | MISSENSE |
| ERBB3      | c.2029A>G(p.M677V) | MISSENSE |
| NOTCH1     | c.1066T>A(p.S356T) | MISSENSE |
| FANCI      | c.428A>G(p.N143S) | MISSENSE |
| BRAF       | c.712-2delA       | SPLICE   |
| POT1       | c.559A>C(p.T187P) | MISSENSE |
| CDK12      | c.754C>T(p.R252*) | STOP GAINED |
| PDE11A     | c.1238G>A(p.R413Q) | MISSENSE |
| SMARCA4    | c.4270C>T(p.P1424S) | MISSENSE |
| CHEK2      | c.1283C>G(p.S428C) | MISSENSE |
| AXIN2      | c.32dupC(p.D12Gfs*8) | FRAMESHIFT |
| TTF1       | c.269G>A(p.R90K)  | MISSENSE |
| APC        | c.637C>T(p.R213*) | STOP GAINED |
| TP53       | c.818G>A(p.R273H) | MISSENSE |
| CDKN1B     | c.4198G>T(p.E1400*) | STOP GAINED |
| MSH6       | c.3964G>T(p.E1322*) | STOP GAINED |
| APC        | c.854A>G(p.D285G) | MISSENSE |
| PTPN13     | c.1570A>C(p.I524L) | MISSENSE |
| ZNF217     | c.227A>G(p.H76R)  | MISSENSE |
| EPHA5      | c.1345G>A(p.D449N) | MISSENSE |
| STAT3      | c.1875G>T(p.E625D) | MISSENSE |
| NPM1       | c.859C>A(p.L287I) | MISSENSE |
| KRAS       | c.292G>T(p.E98*)  | STOP GAINED |
| TTF1       | c.2344G>T(p.E782*) | STOP GAINED |
| FAT1       | c.241A>C(p.N81H)  | MISSENSE |
| PREX2      | c.2629A>C(p.I877L) | MISSENSE |
| BUB1B      | c.1246C>T(p.R416W) | MISSENSE |
| CYP2A6     | c.241C>G(p.L81V)  | MISSENSE |
| FLT1       | c.2306C>T(p.A769V) | MISSENSE |
| KRAS       | c.436G>A(p.A146T) | MISSENSE |
| RICTOR     | c.839G>A(p.R280Q) | MISSENSE |
| PRKDC      | c.7060A>C(p.I2354L) | MISSENSE |
| GATA1      | c.182C>A(p.A61D)  | MISSENSE |
| SPRED1     | c.470T>C(p.F157S) | MISSENSE |
| QKI        | c.10G>A(p.E4K)    | MISSENSE |
| BRAF       | c.1165C>T(p.R389C) | MISSENSE |
| LRP1B      | c.3514C>A(p.L1172I) | MISSENSE |
| SMAD4      | c.919G>T(p.E307*) | STOP GAINED |
| FAT1       | c.4516C>T(p.R1506C) | MISSENSE |
| SMAD4      | c.1487G>A(p.R496H) | MISSENSE |
| ERBB4      | c.283C>T(p.R95C)  | MISSENSE |
| CHD8       | c.3207C>A(p.F1069L) | MISSENSE |
| Gene     | Variant          | Type          |
|----------|------------------|---------------|
| PDGFRA   | c.452G>A(p.R151H) | MISSENSE     |
| B2M      | c.119C>A(p.S40*)  | STOP GAINED  |
| SGK1     | c.275C>A(p.S92Y)  | MISSENSE     |
| CYSLTR2  | c.944G>A(p.R315K) | MISSENSE     |
| PIK3CA   | c.3129G>T(p.M1043I) | MISSENSE |
| LHCGR    | c.1078G>T(p.D360Y) | MISSENSE     |
| SMAD2    | c.919A>C(p.N307H) | MISSENSE     |
| TTF1     | c.1043C>T(p.A348V) | MISSENSE     |
| CTNNB1   | c.2129G>A(p.R710H) | MISSENSE     |
| PIK3R1   | c.1042C>T(p.R348*) | STOP GAINED  |
| STMN1    | c.88G>T(p.E30*)   | STOP GAINED  |
| APC      | c.4348C>T(p.R1450*) | STOP GAINED |
| LGP1B    | c.805G>T(p.G269*) | STOP GAINED  |
| AMER1    | c.2815G>T(p.E939*) | STOP GAINED  |
| CDC73    | c.1450C>T(p.R484C) | MISSENSE     |
| PDGFRA   | c.2097G>T(p.E699D) | MISSENSE     |
| FANCM    | c.5797C>A(p.L1933I) | MISSENSE |
| FANCL    | c.203G>A(p.R68Q)  | MISSENSE     |
| ARID2    | c.977C>A(p.S326Y) | MISSENSE     |
| MAP2K1   | c.199G>A(p.D67N)  | MISSENSE     |
| GNAS     | c.409G>T(p.A137S) | MISSENSE     |
| MITF     | c.952G>T(p.E318*) | STOP GAINED  |
| PIK3R1   | c.1381C>T(p.R461*) | STOP GAINED  |
| RELN     | c.4864C>T(p.R1622*) | STOP GAINED |
| CHD8     | c.4744C>T(p.R1582*) | STOP GAINED |
| ATRX     | c.3155A>C(p.K1052T) | MISSENSE     |
| FAT1     | c.7513G>A(p.A2505T) | MISSENSE     |
| PREX2    | c.311A>C(p.E104A) | MISSENSE     |
| MAP2K4   | c.968G>A(p.G323E) | MISSENSE     |
| PIK3R1   | c.1892G>A(p.R631Q) | MISSENSE     |
| ATR      | c.4467C>T(p.L1495S) | MISSENSE     |
| EZH2     | c.144A>C(p.K48N)  | MISSENSE     |
| NF1      | c.5588G>T(p.G1863V) | MISSENSE    |
| AR       | c.2428G>T(p.A810S) | MISSENSE     |
| ROS1     | c.892A>C(p.K298Q) | MISSENSE     |
| GRIN2A   | c.3217G>T(p.E1073*) | STOP GAINED |
| KDM5A    | c.4672G>T(p.E1558*) | STOP GAINED |
| PTK2     | c.2652G>T(p.K884N) | MISSENSE     |
| ARID1A   | c.4646G>A(p.G1549D) | MISSENSE     |
| FBXW7    | c.103C>T(p.R35C)  | MISSENSE     |
| PDE11A   | c.4G>A(p.A2T)     | MISSENSE     |
| TNFRSF11A| c.983C>A(p.S328*) | STOP GAINED  |
| THADA    | c.627A>C(p.Q209H) | MISSENSE     |
| NFE2L2   | c.1687G>A(p.E563K) | MISSENSE     |
| LRP1B    | c.7333G>A(p.D2445N) | MISSENSE    |
| TUBB3    | c.185G>A(p.R62Q)  | MISSENSE     |
| MAP2K4   | c.658A>C(p.K220Q) | MISSENSE     |
| Gene   | Mutation       | Type             |
|--------|----------------|------------------|
| AR     | c.1974G>T(p.Q658H) | MISSENSE         |
| ATR    | c.7282C>A(p.L2428I) | MISSENSE         |
| TOP2A  | c.1683G>A(p.W561*) | STOP GAINED      |
| APC    | c.2828C>A(p.S943*) | STOP GAINED      |
| ROS1   | c.3730G>T(p.E1244*) | STOP GAINED      |
| ATRX   | c.6301G>T(p.E2101*) | STOP GAINED      |
| DPYD   | c.2682G>T(p.K894N) | MISSENSE         |
| PKHD1  | c.11021G>A(p.S3674N) | MISSENSE         |
| MRE11A | c.42A>C(p.K14N)     | MISSENSE         |
| GRIN2A | c.1663G>A(p.A555T)  | MISSENSE         |
| TEK    | c.2475A>C(p.K825N)  | MISSENSE         |
| RAC1   | c.73A>T(p.T25S)    | MISSENSE         |
| WT1    | c.599G>A(p.S200N)  | MISSENSE         |
| ABCB1  | c.122G>A(p.R41H)   | MISSENSE         |
| STAT3  | c.148G>T(p.E50*)  | STOP GAINED      |
| ATIC   | c.1135C>T(p.R379*) | STOP GAINED      |
| ATR    | c.3118T>G(p.L1040V) | MISSENSE         |
| LRP1B  | c.9086G>A(p.S3029N) | MISSENSE         |
| CCNE1  | c.72C>A(p.F24L)    | MISSENSE         |
| MET    | c.1235G>A(p.R412H) | MISSENSE         |
| ZNF217 | c.363G>T(p.K121N)  | MISSENSE         |
| PTPN13 | c.2480C>A(p.S827Y) | MISSENSE         |
| FANCD2 | c.3857A>G(p.D1286G) | MISSENSE         |
| APC    | c.6709C>T(p.R2237*) | STOP GAINED      |
| PPP2R1A| c.1627T>C(p.S543P) | MISSENSE         |
| CTNNB1 | c.1544G>A(p.R515Q) | MISSENSE         |
| CXCR4  | c.421G>A(p.A141T)  | MISSENSE         |
| GNAS   | c.595C>T(p.R199C)  | MISSENSE         |
| CBL    | c.2363G>A(p.R788Q) | MISSENSE         |
| MCL1   | c.437T>C(p.L146S)  | MISSENSE         |
| STAG2  | c.2998C>T(p.L1000F) | MISSENSE       |
| ATR    | c.442G>T(p.E148*)  | STOP GAINED      |
| PIK3CA | c.1624G>A(p.E542K) | MISSENSE         |
| BAD    | c.146G>A(p.S49N)   | MISSENSE         |
| SMAD4  | c.404G>A(p.R135Q)  | MISSENSE         |
| MITF   | c.217C>T(p.R73C)   | MISSENSE         |
| POLE   | c.1331T>A(p.M444K) | MISSENSE         |
| EP300  | c.2891C>A(p.S964Y) | MISSENSE         |
| Dicer1 | c.5552G>A(p.R1851H) | MISSENSE       |
| KRAS   | c.34G>T(p.G12C)    | MISSENSE         |
| APC    | c.4486delA(p.T1496Lfs*1) | FRAMESHIFT |
| FANCG  | c.176-2A>C         | SPLICE           |
| LRP1B  | c.5037G>C(p.R1679S) | MISSENSE         |
| APC    | c.2626C>T(p.R876*) | STOP GAINED      |
| TP63   | c.535G>A(p.V179M)  | MISSENSE         |
| TP53   | c.818G>A(p.R273H)  | MISSENSE         |
| PREX2  | c.1037C>G(p.P346R) | MISSENSE         |
| Gene   | Mutation                 | Type            |
|--------|--------------------------|-----------------|
| RB1    | c.2263T>A(p.F755I)      | MISSENSE        |
| NOTCH2 | c.7255C>A(p.P2419T)     | MISSENSE        |
| TAP1   | c.1904G>A(p.R635H)      | MISSENSE        |
| SPRED1 | c.1262T>A(p.V421D)      | MISSENSE        |
| LHCGR  | c.1664A>G(p.N555S)      | MISSENSE        |
| PIK3CA | c.3012G>A(p.M1004I)     | MISSENSE        |
| PBMR1  | c.2776dupA(p.R926Kfs*10) | FRAMESHIFT     |
| CHD8   | c.4658G>A(p.R1553Q)     | MISSENSE        |
| FGFR2  | c.308G>A(p.G103D)       | MISSENSE        |
| LRP1B  | c.4723T>A(p.F1575I)     | MISSENSE        |
| EPHA3  | c.1306G>A(p.A436T)      | MISSENSE        |
| APC    | c.2461_2462delGT(p.VF)  | FRAMESHIFT     |
| ROS1   | c.6176T>G(p.L2059R)     | MISSENSE        |
| RAD50  | c.3163delA(p.S1055Vfs)  | FRAMESHIFT     |
| RAD50  | c.1376dupA(p.N459Kfs*)  | FRAMESHIFT     |
| ERBB2  | c.2990C>T(p.A997V)      | MISSENSE        |
| JAK1   | c.1289dupC(p.L431Vfs*)  | FRAMESHIFT     |
| JARID2 | c.1186dupG(p.A396Gfs)   | FRAMESHIFT     |
| KMT2A  | c.2317_2318dupCC(p.S)   | FRAMESHIFT     |
| PKHD1  | c.11763delA(p.E3922Kfs)| FRAMESHIFT     |
| MLH3   | c.3137G>A(p.R1046Q)     | MISSENSE        |
| RNF43  | c.1576G>A(p.V526M)      | MISSENSE        |
| LZTR1  | c.2317G>A(p.V773M)      | MISSENSE        |
| CHD8   | c.5783G>A(p.R1928Q)     | MISSENSE        |
| PMS2   | c.1239dupA(p.D414Rfs)   | FRAMESHIFT     |
| APC    | c.646C>T(p.R216*)       | STOP GAINED    |
| SMO    | c.635G>A(p.G212D)       | MISSENSE        |
| MSH6   | c.3260_3261dupCC(p.F)   | FRAMESHIFT     |
| FLCN   | c.1285dupC(p.H429Kfs)   | FRAMESHIFT     |
| BUB1B  | c.2488G>A(p.D830N)      | MISSENSE        |
| IGF2   | c.536G>A(p.R179Q)       | MISSENSE        |
| RARA   | c.574C>T(p.R192C)       | MISSENSE        |
| LZTR1  | c.1217C>T(p.T406M)      | MISSENSE        |
| FLCN   | c.1285delC(p.H429Tfs*)  | FRAMESHIFT     |
| ATM    | c.8704A>G(p.T2902A)     | MISSENSE        |
| B2M    | c.293A>G(p.Y98C)        | MISSENSE        |
| AIP    | c.325G>A(p.A109T)       | MISSENSE        |
| IFN格  | c.961T>C(p.S321P)       | MISSENSE        |
| PMS2   | c.353G>A(p.S118N)       | MISSENSE        |
| ARID1A | c.936dupC(p.G313Rfs*8)  | FRAMESHIFT     |
| MSH6   | c.3261dupC(p.F1088Lfs)  | FRAMESHIFT     |
| ERBB2  | c.2524G>A(p.V842I)      | MISSENSE        |
| ASXL1  | c.1934dupG(p.G646Wfs)   | FRAMESHIFT     |
| MUTYH  | c.389-2A>C              | SPLICE          |
| ATR    | c.6700A>G(p.S2234G)     | MISSENSE        |
| PIK3R2 | c.1712G>T(p.R571L)      | MISSENSE        |
| PMS1   | c.2766delT(p.H923Lfs*3) | FRAMESHIFT     |
RUNX1  c.318G>A(p.W106*)  STOP GAINED
KRAS  c.35G>T(p.G12V)  MISSENSE
CHD4  CHD4:exon30*IGR (ups FUSION)
TP53  c.844C>T(p.R282W)  MISSENSE
KMT2C  c.2759dupT(p.L921fs*1)  FRAMESHIFT
APC  c.2413C>T(p.R805*)  STOP GAINED
ASXL1  c.1934dupG(p.G646Wfs)  FRAMESHIFT
ATM  c.8190G>T(p.Q2730H)  MISSENSE
MTOR  c.6422C>A(p.P2141Q)  MISSENSE
APC  c.694C>T(p.R232*)  STOP GAINED
AMER1  c.2156T>C(p.M719T)  MISSENSE
KRAS  c.35G>T(p.G12V)  MISSENSE
CHD4  c.4018C>T(p.R1340C)  MISSENSE
KRAS  c.35G>T(p.G12V)  MISSENSE
BRAF  c.1781A>G(p.D594G)  MISSENSE
ERBB2  c.2033G>A(p.R678Q)  MISSENSE
FAT1  c.7361G>A(p.R2454Q)  MISSENSE
APC  c.4921G>T(p.V1641L)  MISSENSE
LRP1B  c.7707G>T(p.K2569N)  MISSENSE
APC  c.1660C>T(p.R554*)  STOP GAINED
EPHA3  c.2740C>T(p.R914C)  MISSENSE
WRN  c.1298A>G(p.D433G)  MISSENSE
APC  c.3928A>T(p.K1310*)  STOP GAINED
TP53  c.637C>T(p.R213*)  STOP GAINED
PIK3CA  c.1624G>A(p.E542K)  MISSENSE
KDM5A  c.2356G>A(p.D786N)  MISSENSE
DICER1  c.1219G>T(p.D407Y)  MISSENSE
MTOR  c.7499T>A(p.I2500N)  MISSENSE
PIK3CA  c.1633G>A(p.E545K)  MISSENSE
CTNNB1  c.13+91_181del  SPLICE
KRAS  c.35G>A(p.G12D)  MISSENSE
NRAS  c.182A>T(p.Q61L)  MISSENSE
ARAF  c.133_134del(p.L45Rfs)  FRAMESHIFT
SMAD4  c.1333C>T(p.R445*)  STOP GAINED
FANCA  c.967A>T(p.T323S)  MISSENSE
RNF43  c.505G>A(p.A169T)  MISSENSE
NTRK2  c.1388G>C(p.G463A)  MISSENSE
TP53  c.818G>A(p.R273H)  MISSENSE
CREBBP  c.2431G>T(p.G811W)  MISSENSE
FBXW7  c.1039C>T(p.R347C)  MISSENSE
SRC  c.1312+2T>C  SPLICE
APC  c.2351del(p.S784Ffs)  FRAMESHIFT
SKP2  c.127A>T(p.K43*)  STOP GAINED
TERT  c.1291C>A(p.P431T)  MISSENSE
APC  c.1312+2T>C  SPLICE
c.1867C>T (p.R623C)  MISSENSE

P55  TP53  c.818G>A (p.R273H)  MISSENSE

P55  KRAS  c.35G>T (p.G12V)  MISSENSE

P55  FAT1 c.10431_10433del(p.| INFRAME INDEL

P55  ZNF217  Amplification

P55  TOP1  Amplification

P56  ALK  c.4460C>T (p.S1487L)  MISSENSE

P56  BUB1B  c.2983A>G (p.K995E)  MISSENSE

P56  RNF43 c.351_352insAC (p.| FRAMESHIFT

P56  PIK3CA  c.3129G>T (p.M1043I)  MISSENSE

P56  RNF43 c.350G>C (p.R117P)  MISSENSE

P56  APC  c.637C>T (p.R213*)  STOP GAINED

P56  KIT  c.1588G>A (p.V530I)  MISSENSE

P56  ESR1  c.1712C>T (p.A571V)  MISSENSE

P56  APC  c.3927_3931del(p.|E1: FRAMESHIFT

P56  ATM  c.1899-2_1914del  SPLICE

P56  KRAS  c.35G>A (p.G12D)  MISSENSE

P57  EGFR  Amplification

P57  APC  c.1312+1G>A  SPLICE

P57  TP53  c.844C>T (p.R282W)  MISSENSE

P57  RICTOR  RICTOR:exon4~IGR (u FUSION

P58  ERBB4  c.2479A>G (p.I827V)  MISSENSE

P58  KDM5A  c.4440C>G (p.F1480L)  MISSENSE

P58  BMPR1A  c.1441C>T (p.P481S)  MISSENSE

P58  NOTCH2  c.6498del(p.|S2167Lfs FRAMESHIFT

P58  FANCG  c.1733C>T (p.T578I)  MISSENSE

P58  KRAS  c.35G>A (p.G12D)  MISSENSE

P58  JAK3  c.1511C>T (p.S504F)  MISSENSE

P58  PKHD1  c.1154C>G (p.T385R)  MISSENSE

P58  BMPR1A  c.1362del(p.|Q454Hfs* FRAMESHIFT

P58  BTK  c.868C>T (p.Q290*)  STOP GAINED

P58  PTEN  c.697G>C (p.D326H)  MISSENSE

P58  AKT1  c.968G>T (p.D323Y)  MISSENSE

P58  TEK  c.3178C>T (p.P1060S)  MISSENSE

P58  TP53  c.818G>A (p.R273H)  MISSENSE

P58  PAK3  c.118G>C (p.E40Q)  MISSENSE

P58  SPRY4  c.366C>G (p.D122E)  MISSENSE

P58  CUL3  c.765G>T (p.L255F)  MISSENSE

P59  APC  c.694C>T (p.R232*)  STOP GAINED

P59  TP53  c.747G>A (p.R249S)  MISSENSE

P59  FLT1  Amplification

P59  CXCR4  c.575G>A (p.R192H)  MISSENSE

P60  GNAS  c.215C>T (p.S72L)  MISSENSE

P60  FLT3  Amplification
| Gene   | variant     | nature       |
|--------|-------------|--------------|
| MSH2   | c.2008C>T(p.P670S) | MISSENSE    |
| LHCG   | c.1435C>T(p.R479*)  | STOP GAINED |
| TP53   | c.535C>T(p.H179Y)   | MISSENSE    |
| TP53   | c.525_530delinsTG(p.FRAMESHIFT) |       |
| MAP2K1 | c.171G>T(p.K57N)    | MISSENSE    |
| APC    | c.4478_4479delinsA(p.FRAMESHIFT) |       |
| APC    | c.3897_3907del(p.T1:F) |       |
| CREBBP | c.1063C>T(p.Q355*)  | STOP GAINED |
| TP53   | c.733G>A(p.G245S)   | MISSENSE    |
| APC    | c.2512A>T(p.R838*)  | STOP GAINED |
| BRD4   | c.152C>G(p.S51C)    | MISSENSE    |
| AKT2   | IGR (downstream UQ: FUSION) |       |
| FBXW7  | c.1336_1338del(p.R4:INFRAME INDEL) |       |
| PPP2R1A| c.547C>T(p.R183W)   | MISSENSE    |
| EGFR   | Amplication       |             |
| BRD4   | c.196C>A(p.L66M)    | MISSENSE    |
| LRP1B  | c.3214C>T(p.R1072C) | MISSENSE    |
| CREBBP | c.3349C>A(p.P1117T) | MISSENSE    |
| KRAS   | c.38G>A(p.G13D)     | MISSENSE    |
| FLCN   | c.250_295dup(p.D99) | STOP GAINED |
| NTRK3  | c.640G>A(p.V214M)   | MISSENSE    |
| ASXL1  | c.2077C>T(p.R693*)  | STOP GAINED |
| TP53   | c.524G>A(p.R175H)   | MISSENSE    |
| PIK3CA | c.1638G>C(p.Q546H)  | MISSENSE    |
| KRAS   | c.34G>T(p.G12C)     | MISSENSE    |
| TP53   | c.395A>C(p.K132T)   | MISSENSE    |
| APC    | c.4666dup(p.T1556N) | FRAME SHIFT |
| AMER1  | c.1489C>T(p.R497*)  | STOP GAINED |
| PDE11A | c.1105G>A(p.A369T)  | MISSENSE    |
| PKHD1  | c.3805G>A(p.V1269N) | MISSENSE    |
| NOTCH1 | c.2357C>T(p.P786L)  | MISSENSE    |
| SMAD4  | c.1607T>C(p.L536P)  | MISSENSE    |
| APC    | Deletion           |             |
| BRAF   | c.1406G>C(p.G469A)  | MISSENSE    |
| RECQL4 | c.1151G>A(p.R384Q)  | MISSENSE    |
| APC    | c.4606G>T(p.E1536*) | STOP GAINED |
| FANCA  | c.74T>A(p.L25Q)     | MISSENSE    |
| DNMT3A | c.196C>A(p.P66T)    | MISSENSE    |
| RNF43  | c.1825C>T(p.R609W)  | MISSENSE    |
| SMAD4  | c.1082G>A(p.R361H)  | MISSENSE    |
| TP53   | c.817C>T(p.R273C)   | MISSENSE    |
| CDC73  | c.559G>C(p.A187P)   | MISSENSE    |
| BRCA2  | c.6952C>T(p.R2318*) | STOP GAINED |
| TOP1   | c.829A>C(p.N277H)   | MISSENSE    |
| Gene  | Symbol | Mutation          | Type          |
|-------|--------|-------------------|---------------|
| ATRX  | c.3195G>T(p.E1065D) | MISSENSE       |
| TSHR  | c.325C>T(p.R109W)   | MISSENSE       |
| NTRK1 | c.2005T>G(p.D184Y)  | MISSENSE       |
| NF1   | c.4084C>T(p.R1362*) | STOP GAINED    |
| XPC   | c.2497G>T(p.E833*)  | STOP GAINED    |
| CUL3  | c.532G>T(p.E178*)   | STOP GAINED    |
| ATRX  | c.550G>T(p.D184Y)   | MISSENSE       |
| GRIN2A| c.1918A>G(p.I640V)  | MISSENSE       |
| FLT4  | c.1696G>A(p.E566K)  | MISSENSE       |
| DTL   | c.612G>T(p.Q204H)   | MISSENSE       |
| PREX2 | c.2473T>C(p.Y825H)  | MISSENSE       |
| AKT3  | c.497G>A(p.R166Q)   | MISSENSE       |
| RAD54L| c.1062G>T(p.K354N)  | MISSENSE       |
| PPP2R1A| c.82C>T(p.R28C)  | MISSENSE       |
| APC   | c.688C>T(p.R230C)   | MISSENSE       |
| IDH1  | c.59G>T(p.R20L)     | MISSENSE       |
| FAT1  | c.5050A>C(p.S1684R) | MISSENSE       |
| MSH2  | c.1588G>T(p.E530*)  | STOP GAINED    |
| ABCB1 | c.160G>T(p.G54*)    | STOP GAINED    |
| FBXW7 | c.286G>T(p.E96*)    | STOP GAINED    |
| CDK12 | c.3308-1G>A         | SPLICE         |
| EGFR  | c.382A>G(p.N128D)   | MISSENSE       |
| PDE11A| c.1034T>G(p.I345S)  | MISSENSE       |
| LRP1B | c.3041C>A(p.S1014Y) | MISSENSE       |
| BRCA2 | c.3459G>T(p.K1153N) | MISSENSE       |
| PTEN  | c.996A>C(p.K332N)   | MISSENSE       |
| DDR2  | c.1049A>G(p.Y350C)  | MISSENSE       |
| TUBB3 | c.795C>A(p.F265L)   | MISSENSE       |
| EPA51 | c.910A>C(p.S304R)   | MISSENSE       |
| NSD1  | c.507G>T(p.K169N)   | MISSENSE       |
| LHCGR | c.505T>G(p.F169V)   | MISSENSE       |
| NSD1  | c.5149C>T(p.R1717C) | MISSENSE       |
| ATM   | c.742C>T(p.R248*)   | STOP GAINED    |
| FANCC | c.1555A>G(p.T519A)  | MISSENSE       |
| GRM8  | c.1146G>T(p.K382N)  | MISSENSE       |
| KMT2A | c.444C>A(p.F148L)   | MISSENSE       |
| GRIN2A| c.3843G>T(p.K1281N) | MISSENSE       |
| ROS1  | c.6629G>T(p.R2210I) | MISSENSE       |
| SETD2 | c.1715C>A(p.S572Y)  | MISSENSE       |
| IL7R  | c.638T>G(p.F213C)   | MISSENSE       |
| CXCR4 | c.1056T>G(p.S352R)  | MISSENSE       |
| MRE11 | c.1561G>T(p.E521*)  | STOP GAINED    |
| SMAD2 | c.565G>T(p.E189*)   | STOP GAINED    |
| SETD2 | c.3694A>T(p.K1232*) | STOP GAINED    |
| Gene  | Mutation   | Type       |
|-------|------------|------------|
| JUN   | c.907G>T(p.E303*) | STOP GAINED |
| PDE11A| c.1029C>A(p.F343L) | MISSENSE   |
| SETBP1| c.3436C>T(p.R1146W) | MISSENSE   |
| NSD1  | c.758A>C(p.K253T)  | MISSENSE   |
| CYP2D6| c.909C>A(p.F303L)  | MISSENSE   |
| GRM3  | c.1004G>A(p.R335H) | MISSENSE   |
| APC   | c.4199C>T(p.S1400L) | MISSENSE   |
| RAD51C| c.940A>C(p.I314L)  | MISSENSE   |
| GATA4 | c.775C>T(p.R259C)  | MISSENSE   |
| HDAC9 | c.1259C>A(p.S420Y) | MISSENSE   |
| WISP3 | c.761G>A(p.S254N)  | MISSENSE   |
| FAT1  | c.10045G>A(p.V3349I) | MISSENSE |
| NSD1  | c.2101G>A(p.D701N) | MISSENSE   |
| IFNGR2| c.995A>C(p.K332T)  | MISSENSE   |
| AKT3  | c.1192G>T(p.R398*)  | STOP GAINED |
| TAP1  | c.1227C>A(p.Y409*)  | STOP GAINED |
| FAT1  | c.2752G>T(p.E918*)  | STOP GAINED |
| PTCH1 | c.2145C>A(p.F715L)  | MISSENSE   |
| DDR2  | c.724T>G(p.F242V)   | MISSENSE   |
| BLM   | c.1537A>C(p.K513Q)  | MISSENSE   |
| RAD51D| c.629C>T(p.A210V)   | MISSENSE   |
| ERBB4 | c.3668A>G(p.N1223S) | MISSENSE   |
| DICER1| c.4928A>G(p.K1643R) | MISSENSE   |
| PTK2  | c.2123A>C(p.Q708P)  | MISSENSE   |
| KDM5A | c.4483A>C(p.K1495Q) | MISSENSE   |
| ERBB4 | c.3128C>T(p.S1043L) | MISSENSE   |
| KDM5A | c.559G>T(p.D187Y)   | MISSENSE   |
| CHD4  | c.4657A>G(p.T1553A) | MISSENSE   |
| ZNF217| c.2222A>C(p.K741T)  | MISSENSE   |
| SRC   | c.95T>A(p.F32Y)     | MISSENSE   |
| PIK3C3| c.66G>T(p.K22N)     | MISSENSE   |
| PIK3R1| c.232C>T(p.R78*)    | STOP GAINED|
| FGFR2 | c.2306A>G(p.Y769C)  | MISSENSE   |
| PTPN13| c.3396T>G(p.S1132R) | MISSENSE   |
| FLT3  | c.2779G>A(p.A927T)  | MISSENSE   |
| ERBB4 | c.2131C>T(p.R711C)  | MISSENSE   |
| ERCC2 | c.1264G>T(p.D422Y)  | MISSENSE   |
| POLE  | c.857C>G(p.P286R)   | MISSENSE   |
| DOT1L | c.850T>G(p.L284V)   | MISSENSE   |
| PDGFRB| c.2225A>G(p.D742G)  | MISSENSE   |
| EMSY  | c.566T>C(p.V189A)   | MISSENSE   |
| IGFI1 | c.625A>C(p.N209H)   | MISSENSE   |
| IGF1R | c.282G>T(p.K94N)    | MISSENSE   |
| NSD1  | c.5278A>G(p.T1760A) | MISSENSE   |
P65  KMT2B  c.1966G>A(p.E656K)  MISSENSE
P65  CEP57  c.1417A>C(p.K473Q)  MISSENSE
P65  AXL  c.1315C>T(p.R439C)  MISSENSE
P65  BRCA1  c.3690A>C(p.L1230F)  MISSENSE
P65  POLH  c.241C>T(p.R81C)  MISSENSE
P65  FAT1  c.922T>C(p.S308P)  MISSENSE
P65  BLM  c.3553T>G(p.L1185V)  MISSENSE
P65  ALK  c.776G>A(p.R259H)  MISSENSE
P65  FANCD2  c.1610G>T(p.S537I)  MISSENSE
P65  CDK8  c.196G>T(p.E66*) STOP GAINED
P65  FBXW7  c.289G>T(p.E97*) STOP GAINED
P65  ARID1A  c.1820C>A(p.S607*) STOP GAINED
P65  ERCC1  c.661G>A(p.D221N)  MISSENSE
P65  KMT2B  c.1430G>T(p.S477I)  MISSENSE
P65  KDR  c.2053G>A(p.E685K)  MISSENSE
P65  SMAD2  c.962G>A(p.R321Q)  MISSENSE
P65  MAP3K1  c.1918T>C(p.S640P)  MISSENSE
P65  ATF1  c.691C>T(p.R231C)  MISSENSE
P65  TERT  c.2264T>G(p.V755G)  MISSENSE
P65  FAT1  c.5177A>G(p.D1726G)  MISSENSE
P65  CTNNB1  c.966A>C(p.Q322H)  MISSENSE
P65  ATIC  c.1136G>A(p.R379Q)  MISSENSE
P65  CHD8  c.3214A>G(p.T1072A)  MISSENSE
P65  BMPR1A  c.1411C>T(p.R471C)  MISSENSE
P65  ATR  c.2116G>T(p.E706*) STOP GAINED
P65  TP53  c.637C>T(p.R213*) STOP GAINED
P65  SETD2  c.2872T>G(p.C958G)  MISSENSE
P65  BRCA2  c.8496G>T(p.E2832D) MISSENSE
P65  EXT2  c.402G>T(p.K134N)  MISSENSE
P65  FBXW7  c.1711C>T(p.R571W)  MISSENSE
P65  ATM  c.3617T>C(p.L1206S)  MISSENSE
P65  PKHD1  c.949G>T(p.D317Y)  MISSENSE
P65  CRKL  c.216G>T(p.K72N)  MISSENSE
P65  EXT1  c.593G>A(p.G198D)  MISSENSE
P65  PLCB4  c.224A>C(p.K75T)  MISSENSE
P65  APC  c.2891T>G(p.L964*) STOP GAINED
P65  ROS1  c.1931A>C(p.K644T)  MISSENSE
P65  NRG1  c.862C>T(p.R288W)  MISSENSE
P65  NSD1  c.444T>G(p.I148M)  MISSENSE
P65  GRIN2A  c.262G>A(p.D88N)  MISSENSE
P65  PIK3CA  c.263G>A(p.R88Q)  MISSENSE
P65  ERBB4  c.2605G>A(p.E869K)  MISSENSE
P65  APC  c.7862C>A(p.S2621Y)  MISSENSE
P65  LHCGR  c.425C>T(p.T142M)  MISSENSE
P65  APC    c.6077C>A(p.S2026Y)  MISSENSE
P65  BRCA2  c.5063A>C(p.E1688A)  MISSENSE
P65  KDR    c.858G>T(p.K286N)    MISSENSE
P65  TNFSF11 c.940C>T(p.R314*)    STOP GAINED
P65  FANCI  c.250G>T(p.E84*)    STOP GAINED
P65  ATM    c.895G>T(p.E299*)    STOP GAINED
P65  EP300  c.149C>T(p.S50F)    MISSENSE
P65  DENND1A c.2348C>T(p.A783V)  MISSENSE
P65  DPYD   c.893C>T(p.T298M)   MISSENSE
P65  GRIN2A c.2954C>T(p.P985L)  MISSENSE
P65  TAP1   c.1372A>C(p.K458Q)  MISSENSE
P65  CHD4   c.4013G>T(p.R1338I) MISSENSE
P65  MYCL   c.598A>C(p.I200L)   MISSENSE
P65  PREX2  c.4091T>C(p.V1364A) MISSENSE
P65  CASP8  c.203G>A(p.R68Q)   MISSENSE
P65  KMT2A  c.6185G>A(p.R2062H) MISSENSE
P65  FLT3    c.1826A>G(p.N609S) MISSENSE
P65  LRP1B  c.8330G>A(p.R2777Q) MISSENSE
P65  ERBIN  c.2179G>T(p.D727Y)  MISSENSE
P65  RICTOR c.665G>A(p.R222Q)   MISSENSE
P65  MAP2K4 c.433C>T(p.R145W)  MISSENSE
P65  APC    c.2756G>T(p.R919I)  MISSENSE
P65  PBRM1  c.1564C>T(p.R522*)  STOP GAINED
P65  CDK8   c.709C>T(p.R237*)   STOP GAINED
P65  NRG1   c.841G>T(p.D281Y)  MISSENSE
P65  SMO    c.2002C>T(p.R668C)  MISSENSE
P65  CASP8  c.245G>T(p.R82I)   MISSENSE
P65  RICTOR c.839G>A(p.R280Q)  MISSENSE
P65  ALK    c.1982A>G(p.N661S) MISSENSE
P65  CREBBP c.3832G>A(p.E1278K) MISSENSE
P65  ATR    c.3938A>C(p.K1313T) MISSENSE
P65  PLCB4  c.2221C>T(p.R741C)  MISSENSE
P65  FLT1   c.3671G>T(p.R1224I) MISSENSE
P65  CTLA4  c.554C>A(p.S185Y)  MISSENSE
P65  AR     c.689C>T(p.S230L)  MISSENSE
P65  NTRK1  c.2212G>A(p.D738N) MISSENSE
P65  ERBB4  c.2525G>A(p.R842Q) MISSENSE
P65  CBLB   c.1529G>A(p.R510H) MISSENSE
P65  BRD4   c.8C>T(p.A3V)     MISSENSE
P65  SPRED1 c.138A>T(p.K46N)   MISSENSE
P65  POLE   c.671A>G(p.Y224C)  MISSENSE
P65  PRSS1  c.74T>G(p.V25G)   MISSENSE
P65  PKHD1  c.11006C>T(p.S3669L) MISSENSE
P65  PKHD1  c.2900A>G(p.N967S) MISSENSE
| Gene   | Reference                     | Description     |
|--------|-------------------------------|-----------------|
| GRIN2A | c.2865T>G (p.I955M)           | MISSENSE        |
| WRN    | c.2972C>A (p.S991Y)           | MISSENSE        |
| LYN    | c.266A>C (p.K89T)             | MISSENSE        |
| PGR    | c.415T>G (p.S139A)            | MISSENSE        |
| CTCF   | c.766A>C (p.K256Q)            | MISSENSE        |
| MAP3K1 | c.3420G>A (p.M1140I)          | MISSENSE        |
| PBRM1  | c.2128C>T (p.R710*)           | STOP GAINED     |
| ROS1   | c.4765G>T (p.E1589*)          | STOP GAINED     |
| BRCA2  | c.7795G>T (p.E2599*)          | STOP GAINED     |
| PIK3R1 | c.484C>T (p.R162*)            | STOP GAINED     |
| SETD2  | c.2258T>C (p.V753A)           | MISSENSE        |
| FAT1   | c.12847G>A (p.E4283I)         | MISSENSE        |
| WRN    | c.375A>C (p.K125N)            | MISSENSE        |
| RICTOR | c.3793A>C (p.K1265Q)          | MISSENSE        |
| XRCC2  | c.346T>G (p.F116V)            | MISSENSE        |
| ATR    | c.3064A>C (p.N1022H)          | MISSENSE        |
| RNF43  | c.1701G>T (p.R567S)           | MISSENSE        |
| PIK3R1 | c.880A>G (p.N294D)            | MISSENSE        |
| ABCB1  | c.788C>A (p.T263N)            | MISSENSE        |
| PDGFRB | c.631G>A (p.V211M)            | MISSENSE        |
| ASXL1  | c.2362G>T (p.E788*)           | STOP GAINED     |
| MSH6   | c.3586G>T (p.E1196*)          | STOP GAINED     |
| TNFAIP3| c.913G>T (p.E305*)            | STOP GAINED     |
| TSHR   | c.1762A>G (p.T588A)           | MISSENSE        |
| PIK3CA | c.1281A>G (p.I427M)           | MISSENSE        |
| DPYD   | c.2726G>T (p.R909I)           | MISSENSE        |
| TERT   | c.2684T>C (p.L895P)           | MISSENSE        |
| ABCB1  | c.2522C>A (p.A841E)           | MISSENSE        |
| ZNF217 | c.1555G>A (p.E519K)           | MISSENSE        |
| PALB2  | c.1689G>T (p.K563N)           | MISSENSE        |
| PKHD1  | c.10822T>G (p.L3608V)         | MISSENSE        |
| BAX    | c.376A>G (p.I126V)            | MISSENSE        |
| CHEK2  | c.300G>T (p.Q100H)            | MISSENSE        |
| GRM3   | c.2029G>A (p.A677T)           | MISSENSE        |
| RAD50  | c.3934C>A (p.H1312N)          | MISSENSE        |
| KMT2B  | c.368T>G (p.F123C)            | MISSENSE        |
| PKHD1  | c.6001G>A (p.E2001K)          | MISSENSE        |
| NSD1   | c.1212G>T (p.E404D)           | MISSENSE        |
| LRP1B  | c.11846A>C (p.K39491)         | MISSENSE        |
| PALB2  | c.1348A>C (p.N450H)           | MISSENSE        |
| B2M    | c.128T>G (p.L43R)             | MISSENSE        |
| INPP4B | c.425G>A (p.R142Q)            | MISSENSE        |
| SETD2  | c.7351G>A (p.A2451T)          | MISSENSE        |
| ATR    | c.5110G>T (p.E1704*)          | STOP GAINED     |
| Gene   | Mutation | Impact |
|--------|----------|--------|
| PMS2   | c.1279C>T(p.R427C) | MISSENSE |
| CASP8  | c.1207T>G(p.S403A) | MISSENSE |
| LHCGR  | c.435C>A(p.F145L)  | MISSENSE |
| FLT3   | c.866A>G(p.N289S)  | MISSENSE |
| ALK    | c.700C>T(p.P234S)  | MISSENSE |
| GRM3   | c.1472C>T(p.S491L) | MISSENSE |
| FLT4   | c.3199G>A(p.D1067N) | MISSENSE |
| ROS1   | c.6614G>T(p.R2205I) | MISSENSE |
| ESR1   | c.754A>G(p.K252E)  | MISSENSE |
| APC    | c.3514C>A(p.H1172N) | MISSENSE |
| LRP1B  | c.8791T>G(p.L2931V) | MISSENSE |
| EZH2   | c.155G>T(p.R52I)   | MISSENSE |
| EZH2   | c.143A>C(p.K48T)   | MISSENSE |
| KDM5A  | c.2839G>A(p.E947K) | MISSENSE |
| ABCB1  | c.298G>T(p.D100Y)  | MISSENSE |
| ABCB1  | c.1956A>C(p.E652D) | MISSENSE |
| ATM    | c.8386T>G(p.F2796V) | MISSENSE |
| PAX5   | c.316A>C(p.N106H)  | MISSENSE |
| FLT3   | c.937C>A(p.L313M)  | MISSENSE |
| TP63   | c.566C>T(p.S189L)  | MISSENSE |
| MPL    | c.239G>A(p.S80N)   | MISSENSE |
| NRG1   | c.302C>T(p.A101V)  | MISSENSE |
| LRP1B  | c.10705A>C(p.K3569K) | MISSENSE |
| ABCB1  | c.2861C>T(p.A954V) | MISSENSE |
| ATR    | c.5943A>C(p.E1981D) | MISSENSE |
| DPD    | c.2951A>G(p.D984G) | MISSENSE |
| MLH3   | c.2108A>C(p.K703T) | MISSENSE |
| GRN2A  | c.1822C>A(p.L608I) | MISSENSE |
| RUNX1T1| c.1381C>T(p.R461C) | MISSENSE |
| SETD2  | c.3260C>A(p.S1087Y) | MISSENSE |
| GRM8   | c.364G>A(p.A122T)  | MISSENSE |
| ROS1   | c.734G>T(p.R245I)  | MISSENSE |
| RAD51  | c.223C>A(p.L75M)   | MISSENSE |
| NFE2L2 | c.1285G>T(p.E429*) | STOP GAINED |
| ROS1   | c.3632A>G(p.N1211S) | MISSENSE |
| STK11  | c.94A>G(p.T32A)    | MISSENSE |
| CBLB   | c.2881G>A(p.E961K) | MISSENSE |
| FANCD2 | c.2351C>T(p.S784F) | MISSENSE |
| FAT1   | c.3907G>A(p.E1303K) | MISSENSE |
| FGFR3  | c.1209G>T(p.K403N) | MISSENSE |
| NF1    | c.3297A>C(p.K1099N) | MISSENSE |
| FAT1   | c.3191G>A(p.R1064K') | MISSENSE |
| ARID2  | c.919G>A(p.A307T)  | MISSENSE |
| PIK3CA | c.2373G>T(p.E791D) | MISSENSE |
| P65 | SMAD2   | c.1114A>G(p.T372A) | MISSENSE  |
| P65 | NBN     | c.1367A>C(p.K456T) | MISSENSE  |
| P65 | HGF     | c.1141C>A(p.P381T) | MISSENSE  |
| P65 | FAT1    | c.2101G>A(p.D701N) | MISSENSE  |
| P65 | HDAC2   | c.1002C>A(p.Y334*) | STOP GAINED |
| P65 | PKHD1   | c.4975G>T(p.E1659*) | STOP GAINED |
| P65 | NF1     | c.782A>C(p.K261T) | MISSENSE  |
| P65 | ERBB4   | c.99G>T(p.E33D) | MISSENSE  |
| P65 | PTEN    | c.1004G>A(p.R335Q) | MISSENSE  |
| P65 | PTPN13  | c.3308T>C(p.F1103S) | MISSENSE  |
| P65 | PKHD1   | c.12147G>T(p.E4049I) | MISSENSE  |
| P65 | NTRK3   | c.363A>C(p.R121S) | MISSENSE  |
| P65 | FANCL   | c.220A>G(p.M74V) | MISSENSE  |
| P65 | ERBB3   | c.2226A>C(p.K742N) | MISSENSE  |
| P65 | FGFR1   | c.1072G>A(p.V358I) | MISSENSE  |
| P65 | KDR     | c.1812G>T(p.K604N) | MISSENSE  |
| P65 | RICTOR  | c.974G>A(p.R325Q) | MISSENSE  |
| P65 | ROS1    | c.6436T>C(p.S2146P) | MISSENSE  |
| P65 | ATR     | c.2905G>T(p.E969*) | STOP GAINED |
| P65 | BRIP1   | c.493G>T(p.E165*) | STOP GAINED |
| P65 | APC     | c.4463T>G(p.L1488*) | STOP GAINED |
| P65 | ARID1B  | c.6305T>G(p.L2102*) | STOP GAINED |
| P65 | PDGFRB  | c.2310G>T(p.K770N) | MISSENSE  |
| P65 | CEP57   | c.614T>G(p.L205R) | MISSENSE  |
| P65 | DAXX    | c.423G>T(p.K141N) | MISSENSE  |
| P65 | TTF1    | c.1834G>A(p.D612N) | MISSENSE  |
| P65 | IGF1R   | c.2056A>G(p.N686D) | MISSENSE  |
| P65 | CDK8    | c.518A>G(p.D173G) | MISSENSE  |
| P65 | ATM     | c.3646T>G(p.Y1216D) | MISSENSE  |
| P65 | BAP1    | c.2182C>T(p.R728C) | MISSENSE  |
| P65 | CSF1R   | c.881G>A(p.R294Q) | MISSENSE  |
| P66 | FANCL   | c.925A>G(p.I309V) | MISSENSE  |
| P67 | SMAD4   | c.1477G>A(p.D493N) | MISSENSE  |
| P67 | ATR     | c.4037C>T(p.A1346V) | MISSENSE  |
| P67 | PIK3CA  | c.1028A>T(p.Y343F) | MISSENSE  |
| P67 | SMAD4   | c.1082G>A(p.R361H) | MISSENSE  |
| P67 | AMER1   | c.1358T>G(p.L453R) | MISSENSE  |
| P67 | GNAS    | c.683G>A(p.R228H) | MISSENSE  |
| P67 | KRAS    | c.35G>A(p.G12D) | MISSENSE  |
| P67 | AXL     | c.277C>A(p.Q93K) | MISSENSE  |
| P68 | APC     | c.4012C>T(p.Q1338*) | STOP GAINED |
| P68 | TP53    | c.742C>T(p.R248W) | MISSENSE  |
| P68 | APC     | c.1495C>T(p.R499*) | STOP GAINED |
| P68 | LRP1B   | c.3810C>G(p.I1270M) | MISSENSE  |
P69  CYP2D6  c.875A>T(p.D292V)  MISSENSE
P69  LHCGR  c.287del(p.N96Tfs*9) FRAMESHIFT
P69  PTEN  c.741dup(p.P248Tfs*8) FRAMESHIFT
P69  ARID2  c.214del(p.I72Lfs*18) FRAMESHIFT
P69  SETBP1  c.3983A>G(p.D1328G) MISSENSE
P69  ATM  c.4416_4423dup(p.Y1STOP GAINED
P69  PIK3CA  c.1633G>A(p.E545K) MISSENSE
P69  SMAD3  c.707C>T(p.S236F) MISSENSE
P69  KRAS  c.463G>A(p.A146T) MISSENSE
P69  LRP1B  c.889G>A(p.C2966Y) MISSENSE
P69  TP53  c.509G>A(p.Y163C) MISSENSE
P69  PPARD  c.295C>A(p.R99S) MISSENSE
P69  KRAS  c.35G>C(p.G12D) MISSENSE
P69  APC  c.4484del(p.S1495fs) FRAMESHIFT
P69  TOP2A  c.787C>T(p.P263S) MISSENSE
P70  APC  c.2626C>T(p.R876*) STOP GAINED
P70  PTEN  c.509G>A(p.Y1709) MISSENSE
P70  ALK  c.3257C>T(p.S1086L) MISSENSE
P70  SMARCA4  c.701C>T(p.P234L) MISSENSE
P70  APC  c.4350del(p.E1451Kfs) FRAMESHIFT
P70  SETBP1  c.3233C>T(p.T1078M) MISSENSE
P70  PTEN  c.634+1G>A SPLICE
P70  TP53  c.503A>G(p.H168R) MISSENSE
P70  KRAS  c.35G>T(p.G12V) MISSENSE
P70  APC  c.3441_3492del(p.Y1STOP GAINED
P70  MITF  c.1093G>A(p.A365T) MISSENSE
P70  CHD4  c.1169G>A(p.R390H) MISSENSE
P70  GATA4  c.888G>A(p.A30T) MISSENSE
P70  ATR  c.2800dup(p.C934Lfs) FRAMESHIFT
P70  PREX2  c.1211C>G(p.T404S) MISSENSE
P70  APC  c.1370C>A(p.S457*) STOP GAINED
P70  APC  c.4285C>T(p.Q1429*) STOP GAINED
P70  QKI  c.725G>A(p.R242H) MISSENSE
P70  TP53  c.376-1G>A SPLICE
P70  PIK3CA  c.1633G>A(p.E545K) MISSENSE
P70  AXIN2  c.74C>T(p.P25L) MISSENSE
P70  KRAS  c.38G>A(p.G13D) MISSENSE
P70  FAT1  c.8011_8012del(p.F21STOP GAINED
P70  TP53  Deletion
P70  SMAD4  Deletion
P70  APC  c.1234C>T(p.Q412*) STOP GAINED
P70  ETV1  c.605C>T(p.T202M) MISSENSE
| Gene  | Mutation | Type                  |
|-------|----------|-----------------------|
| RUNX1 | c.731G>A (p.R244K) | Missense             |
| APC   | Deletion                  |                      |
| KRAS  | c.436G>A (p.A146T)       | Missense             |
| TP53  | c.824G>A (p.C275Y)       | Missense             |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| CDKN2B| c.302G>A (p.R101Q)       | Missense             |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
| APC   | c.4348C>T (p.R1450*)     | Stop gained          |
| TP53  | c.286del (p.S96Lfs*27)   | Frameshift           |
P75  B2M  c.346+1dup   SPLICE
P75  TSC1  c.3130G>A(p.E1044K) MISSENSE
P75  SMARCA4  c.3727C>T(p.R1243W) MISSENSE
P75  PKHD1  c.5396T>C(p.L1799P) MISSENSE
P75  SMARCA4  c.4328G>A(p.R1443H) MISSENSE
P75  TNFRSF11  c.401C>T(p.A134V) MISSENSE
P75  FLT3  c.2128T>A(p.F710I) MISSENSE
P75  ARID2  c.1277C>T(p.T426M) MISSENSE
P75  SETBP1  c.3961C>T(p.R1321C) MISSENSE
P76  KRAS  c.35G>T(p.G12V) MISSENSE
P76  ATM  c.6679C>T(p.R2227C) MISSENSE
P76  APC  c.4285C>T(p.Q1429*) STOP GAINED
P76  ATRX  c.6647A>G(p.D2216G) MISSENSE
P76  APC  c.2626C>T(p.R876*) STOP GAINED
P76  MRE11  c.1618T>G(p.F540V) MISSENSE
P77  APC  c.4188del(p.F1396Lfs) FRAMESHIFT
P77  TP53  c.318C>T(p.S106R) MISSENSE
P77  PARP1  c.1076del(p.P359Qfs*) FRAMESHIFT
P77  ASCL4  c.124C>A(p.P42S) MISSENSE
P78  APC  c.3929dup(p.I1311Dfs) FRAMESHIFT
P78  FBXW7  c.1040G>A(p.R347H) MISSENSE
P78  FBXW7  c.1391C>T(p.S464L) MISSENSE
P78  JARID2  c.1817G>A(p.R606Q) MISSENSE
P78  TP53  c.821_826del(p.V274) INFRAME INDEL
P78  KRAS  c.34G>T(p.G12C) MISSENSE
P79  FBXW7  c.1040G>A(p.R347H) MISSENSE
P79  TP53  c.689C>A(p.T230N) MISSENSE
P79  ERBB3  c.179T>G(p.M60R) MISSENSE
P79  BCR  c.2842C>G(p.R948G) MISSENSE
P79  TGFB2  c.458dup(p.P154Afs*) FRAMESHIFT
P79  KMT2B  c.3550G>A(p.V1184N) MISSENSE
P79  NRG1  c.1136C>G(p.S379*) STOP GAINED
P79  SOCS1  c.313G>A(p.D105N) MISSENSE
P79  TGFB2  c.1394A>G(p.E465G) MISSENSE
P79  ERBB2  c.929C>T(p.S310F) MISSENSE
P79  KRAS  c.35G>A(p.G12D) MISSENSE
P79  SETD2  c.4053C>G(p.D1351E) MISSENSE
P79  ROS1  c.3515A>G(p.N1172S) MISSENSE
P79  CHD4  c.3314G>A(p.R1105Q) MISSENSE
P79  MED12  c.47G>A(p.R16Q) MISSENSE
P79  MTOR  c.1363G>A(p.V455M) MISSENSE
P79  TP53  c.693del(p.I232Sfs*) FRAMESHIFT
P80  PIK3R1  c.1946G>A(p.R649Q) MISSENSE
P80  SGK1  c.440G>T(p.R147L) MISSENSE
| Gene     | Mutation          | Type               |
|----------|-------------------|--------------------|
| FANCE    | c.1088T>C(p.L363P) | MISSENSE           |
| AMER1    | c.1072C>T(p.R358*) | STOP GAINED       |
| LRP1B    | c.4576C>T(p.Q1526*)| STOP GAINED       |
| ATR      | c.1367T>C(p.M456T) | MISSENSE           |
| ERCC4    | c.2005A>G(p.T669A) | MISSENSE           |
| WRN      | c.3143G>T(p.R1048I)| MISSENSE           |
| IFNA6    | c.268C>A(p.L90I)  | MISSENSE           |
| PTCH1    | c.3782A>C(p.N1261T)| MISSENSE           |
| STAG2    | c.1841G>A(p.R614Q) | MISSENSE           |
| DOT1L    | c.1364C>T(p.S455F) | MISSENSE           |
| PTEN     | c.451G>C(p.A151P)  | MISSENSE           |
| PTCH1    | c.3397A>G(p.T1133A)| MISSENSE           |
| POLH     | c.73C>T(p.Q25*)    | STOP GAINED       |
| PREX2    | c.1752A>C(p.K584N) | MISSENSE           |
| BRCA1    | c.1982G>T(p.R661M) | MISSENSE           |
| DAXX     | c.554G>A(p.R185Q)  | MISSENSE           |
| FLCN     | c.256C>T(p.R86W)   | MISSENSE           |
| PIK3C3   | c.349G>A(p.G117R)  | MISSENSE           |
| PLK1     | c.1498C>T(p.R500C) | MISSENSE           |
| IL7R     | c.1181G>A(p.G394D) | MISSENSE           |
| PRDM1    | c.223A>G(p.T75A)   | MISSENSE           |
| MSH6     | c.14G>A(p.S5N)     | MISSENSE           |
| GRIN2A   | c.4127G>A(p.R1376H)| MISSENSE           |
| JARID2   | c.1879C>T(p.R627W) | MISSENSE           |
| CHD8     | c.5390G>T(p.R1797L)| MISSENSE           |
| NF1      | c.3496G>T(p.G1166C)| MISSENSE           |
| RECQL4   | c.2507A>G(p.Q836R)| MISSENSE           |
| TSHR     | c.1188G>T(p.M396I) | MISSENSE           |
| PALB2    | c.1988G>A(p.R663H) | MISSENSE           |
| NTRK1    | c.1040G>A(p.R347H) | MISSENSE           |
| CUL3     | c.1193delA(p.K398Rf)| FRAMESHIFT        |
| AXL      | c.874dupC(p.H292Pfs)| FRAMESHIFT        |
| KMT2B    | c.521dupC(p.T176Dfs)| FRAMESHIFT        |
| PIK3R1   | c.244dupA(p.I82Nfs)| FRAMESHIFT        |
| NOTCH2   | c.3415delC(p.L1139V)| FRAMESHIFT        |
| TAP2     | c.223delC(p.L75*)  | FRAMESHIFT        |
| FAT1     | c.12041C>T(p.T4014M)| MISSENSE           |
| IDH1     | c.293C>T(p.T98I)   | MISSENSE           |
| TSC2     | c.229G>A(p.A77T)   | MISSENSE           |
| IFNGR1   | c.1132_1133delAG(p.| FRAMESHIFT        |
| PTEN     | c.800delA(p.K267Rfs)| FRAMESHIFT        |
| BRIP1    | c.3140delT(p.L1047Cf)| FRAMESHIFT        |
| FBXW7    | c.1941delA(p.K647Nf)| FRAMESHIFT        |
| Gene  | Alteration Description |
|-------|------------------------|
| **P80** |                       |
| PBK1  | c.773delA(p.N258Mfs FRAMESHIFT) |
| TNFAIP3 | c.1445G>A(p.G482D) MISSENSE |
| SMARCA4 | c.4303G>A(p.D1435N MISSENSE) |
| IFNGR1 | c.253T>C(p.C85R) MISSENSE |
| MSH6  | 3.260_3261dupCC(p FRAMESHIFT) |
| CUL3  | c.1358dupA(p.N453K FRAMESHIFT) |
| TAP2  | c.552dupT(p.D185*) FRAMESHIFT |
| APC   | c.4734T>A(p.C1578*) STOP GAINED |
| TEK   | c.3368C>T(p.A1123V) MISSENSE |
| KMT2B | c.5501G>A(p.R1834H MISSENSE) |
| KMT2A | c.5114C>A(p.P1705Hf MISSENSE) |
| CDH1  | c.2515G>A(p.G839S) MISSENSE |
| TGFBR2 | c.182G>A(p.C61Y) MISSENSE |
| MUTYH | c.1063G>A(p.V355M) MISSENSE |
| KMT2B | c.4076A>C(p.Q1359Pf MISSENSE) |
| TOP2A | 3.613delA(p.T1205H FRAMESHIFT) |
| MLH3  | c.2021delA(p.N674fs FRAMESHIFT) |
| QKI   | c.401delA(p.K134Rfs* FRAMESHIFT) |
| PREX2 | c.1007delA(p.N336fs FRAMESHIFT) |
| FLT1  | c.1695_1696delAA(p. FRAMESHIFT) |
| APC   | c.1690C>T(p.R564*) STOP GAINED |
| BAP1  | c.869A>G(p.N290S) MISSENSE |
| CHD8  | c.2828G>A(p.R943H) MISSENSE |
| MAP2K1 | c.602G>A(p.R201H) MISSENSE |
| TP53  | c.848G>A(p.R283H) MISSENSE |
| SMARCA4 | c.2900G>A(p.R967Hf MISSENSE) |
| GATA3 | c.256C>T(p.R86C) MISSENSE |
| C11orf30 | c.926C>T(p.T309Mf MISSENSE) |
| PMS2  | c.947A>G(p.H316Rf MISSENSE) |
| FANCM | c.4005delA(p.V1336Lf FRAMESHIFT) |
| TP53  | c.743G>A(p.R248Q) MISSENSE |
| LRP1B | c.7432T>G(p.L2478Vf MISSENSE) |
| QKI   | c.401dupA(p.E135Gfs FRAMESHIFT) |
| KMT2B | c.5563C>T(p.P1855Sf MISSENSE) |
| POLD1 | c.2677G>A(p.D893Nf MISSENSE) |
| EIF1AX | c.38G>A(p.R13Hf MISSENSE) |
| EPHA3 | c.236A>G(p.N79Sf MISSENSE) |
| NF1   | Deletion |
| SMAD4 | c.1082G>A(p.R361Hf MISSENSE) |
| BRCA2 | c.4316C>T(p.A1439Vf MISSENSE) |
| ARID1A | c.6763G>A(p.E2255Kf MISSENSE) |
| APC   | c.694C>T(p.R232*) STOP GAINED |
| RNF43 | c.198A>T(p.E66Df MISSENSE) |
| KRAS  | c.35G>A(p.G12Df MISSENSE) |
| Gene   | Mutation          | Type             |
|--------|-------------------|------------------|
| P82 PB    | c.3425A>G(p.K1142R) | MISSENSE         |
| P82 IDH1  | c.394C>T(p.R132C)  | MISSENSE         |
| P82 GATA6 | IGR (upstream RBBP8 FUSION) |                  |
| P82 MDM2  | c.1026A>C(p.K342N) | MISSENSE         |
| P82 NF1   | c.7039A>G(p.S2347G) | MISSENSE         |
| P82 TP53  | c.524G>A(p.R175H)  | MISSENSE         |
| P82 APC   | c.694C>T(p.R232*)  | STOP GAINED      |
| P82 KRAS  | c.35G>T(p.G12V)    | MISSENSE         |
| P82 PKHD1 | c.5134G>A(p.G1712R)| MISSENSE         |
| P82 PMS1  | c.784A>T(p.I262L)  | MISSENSE         |
| P82 TP53  | c.1024delC(p.R342Efs| FRAMESHIFT       |
| P83 PTEN  | Deletion          |                  |
| P83 GRM8  | c.2372G>T(p.C791F) | MISSENSE         |
| P83 APC   | c.2821G>T(p.E941*) | STOP GAINED      |
| P83 TP53  | c.916C>T(p.R306*)  | STOP GAINED      |
| P83 SMO   | c.734C>T(p.T245M)  | MISSENSE         |
| P83 KRAS  | c.35G>A(p.G12D)    | MISSENSE         |
| P83 APC   | c.4473delT(p.F1491Lf | FRAMESHIFT       |
| P83 FBXW7 | c.1436G>A(p.R479Q) | MISSENSE         |
| P83 CHEK2 | OSBP2:exon1~CHEK2 FUSION |            |
| P83 EPHA5 | c.832G>A(p.A278T)  | MISSENSE         |
| P83 APC   | c.4475C>G(p.A1492G)| MISSENSE         |
| P84 PALB2 | c.3263C>T(p.P1088L)| MISSENSE         |
| P84 AXL   | c.2260C>G(p.R754G) | MISSENSE         |
| P84 TP53  | c.487T>C(p.Y163H)  | MISSENSE         |
| P84 APC   | c.694C>T(p.R232*)  | STOP GAINED      |
| P84 APC   | c.3927_3931delAAAC| FRAMESHIFT       |
| P84 KRAS  | c.38G>A(p.G13D)    | MISSENSE         |
| P85 PLCB4 | c.2246A>G(p.N749S) | MISSENSE         |
| P85 POLH  | c.767G>A(p.R256H)  | MISSENSE         |
| P85 APC   | c.694C>T(p.R232*)  | STOP GAINED      |
| P85 DOT1L | c.3341C>T(p.A1114V)| MISSENSE         |
| P85 PGR   | c.1259G>T(p.G420V) | MISSENSE         |
| P85 TP53  | c.746G>T(p.R249M)  | MISSENSE         |
| P86 TP53  | c.743G>A(p.R248Q)  | MISSENSE         |
| P86 CHD4  | c.3203G>A(p.R1068H)| MISSENSE         |
| P86 FBXW7 | c.1099C>T(p.R367*) | STOP GAINED      |
| P86 CHD8  | c.5009C>T(p.A1670V)| MISSENSE         |
| P86 GRIN2A| c.2984C>T(p.T995M) | MISSENSE         |
| P86 BRCA2 | c.2483A>G(p.Y828C)| MISSENSE         |
| P86 APC   | c.4132C>T(p.Q1378*)| STOP GAINED      |
| P86 APC   | c.1431dupA(p.L478fs| FRAMESHIFT       |
| P87 NOTCH1| c.3271G>A(p.G1091S)| MISSENSE         |
| P87 TP53  | c.743G>A(p.R248Q)  | MISSENSE         |
P87 KRAS  c.34G>T(p.G12C)  MISSENSE
P88 TP53  c.817C>T(p.R273C)  MISSENSE
P89 APC   c.4461_4476delTTTA  FRAMESHIFT
P89 TP53  c.524G>A(p.R175H)  MISSENSE
P89 TP53  c.524G>A(p.R175H)  MISSENSE
P89 APC   c.2626C>T(p.R876*)  STOP GAINED
P89 NRAS  c.181C>A(p.Q61K)   MISSENSE
P90 ZNF703 Amplication
P90 TP53  c.3395A>G(p.D1132G) MISSENSE
P90 APC   c.4189G>T(p.E1397*)  STOP GAINED
P90 DPYD  c.2452_2457dupGCCG  INFRAME INDEL
P90 ERCC5 c.1016C>A(p.P339H)  MISSENSE
P90 TP53  c.637C>T(p.R213*)   STOP GAINED
P90 APC   c.2626C>T(p.R876*)  STOP GAINED
P91 FBXW7 c.988dupA(p.I330Nfs*  FRAMESHIFT
P91 SMAD4 c.346C>T(p.Q116*)   STOP GAINED
P91 MTOR  c.6040G>A(p.E2014K) MISSENSE
P91 TP53  c.916C>T(p.R306*)   STOP GAINED
P91 KRAS  c.35G>T(p.G12V)   MISSENSE
P91 APC   c.1312+2T>C   SPLICE
P91 PARP2 c.1087A>G(p.R363G) MISSENSE
P91 ATRX  c.3397G>T(p.E1133*) STOP GAINED
P91 CXCR4 c.884G>C(p.C295S)  MISSENSE
P92 POLE  c.125A>G(p.D42G)   MISSENSE
P92 RAD51D c.145G>A(p.A49T)  MISSENSE
P92 NBN   c.1397G>A(p.R466K) MISSENSE
P92 RNF43 c.349C>A(p.R1175S) MISSENSE
P92 SF3B1 c.581C>A(p.S194*)  STOP GAINED
P92 POLE  c.204+2T>C   SPLICE
P92 GATA4 c.1232C>T(p.A411V) MISSENSE
P92 FAT1  c.13009G>A(p.V4337) MISSENSE
P92 UGT1A1 c.353dupA(p.D119Gf) FRAMESHIFT
P92 EGFR  c.3631T>C(p.*1211Re STOP LOST
P92 MAP2K2 c.553C>T(p.R185*)  STOP GAINED
P92 BRCA2 c.44T>C(p.F15S)   MISSENSE
P92 MAP2K2 c.1064C>T(p.A355V) MISSENSE
P92 APC   c.3875C>T(p.T1292M) MISSENSE
P92 ZNF217 c.2461C>T(p.H821Y) MISSENSE
P92 IDH1  c.766G>A(p.A256T)  MISSENSE
P92 GATA4 c.776G>A(p.R259H)  MISSENSE
P92 RICTOR c.1661C>T(p.A554V) MISSENSE
P92 KMT2A c.11435C>T(p.R3819C) MISSENSE
P92 FANCA c.1661C>T(p.A554V) MISSENSE
P92 ERCC1 c.155C>T(p.A220V)  MISSENSE
c.3707G>A(p.G1236D) MISSENSE

P92
VHL c.613C>T(p.R205C) MISSENSE

P92
PIK3CA c.328_330delGAA(p.E INFRAME INDEL

P92
MYCN c.302dupG(p.L102Tfs FRAMESHIFT

P92
POLD1 c.2959delG(p.D987Tfs SPLICE

P92
GRM3 c.2314G>T(p.G772C) MISSENSE

P92
CDKN2B c.371G>A(p.G124D) MISSENSE

P92
KDM5A c.3597delA(p.G1200C FRAMESHIFT

P92
ARID1A c.4555delC(p.Q1519R FRAMESHIFT

P92
LZTR1 c.731C>A(p.S244Y) MISSENSE

P92
FGFR4 c.253C>T(p.R85C) MISSENSE

P92
BRCA1 c.1016delA(p.K339Rfs FRAMESHIFT

P92
CHD4 c.218dupA(p.E74Gfs* FRAMESHIFT

P92
FLCN c.1285delC(p.H429Tfs FRAMESHIFT

P92
SPOP c.1100delC(p.P367Hfs FRAMESHIFT

P92
ATM c.7174C>T(p.R2392W MISSENSE

P92
MTOR c.5246G>A(p.R1749Q MISSENSE

P92
QKI c.401delA(p.K134Rfs* FRAMESHIFT

P92
AMER1 c.1832G>A(p.R611K) MISSENSE

P92
SMARCB1 c.641C>T(p.T214M) MISSENSE

P92
SMARCA4 c.597C>A(p.H199Q) MISSENSE

P92
HGF c.85G>A(p.A29T) MISSENSE

P92
DDR2 c.1552delG(p.V518Cfs FRAMESHIFT

P92
RAD50 c.2165dupA(p.E723Gfs FRAMESHIFT

P92
NOTCH1 c.2605G>A(p.D869N) MISSENSE

P92
PALB2 c.1249T>C(p.S417P) MISSENSE

P92
ERBB4 c.2681A>G(p.Y894C) MISSENSE

P92
RPTOR c.3770C>T(p.T1257M MISSENSE

P92
NF1 c.4247G>A(p.P1416H) MISSENSE

P92
BARD1 c.1126T>C(p.S376P) MISSENSE

P92
NOTCH2 c.1264G>T(p.A422S) MISSENSE

P92
PLCB4 c.2429C>T(p.S810L) MISSENSE

P92
JARID2 c.1272delG(p.R425Gfs FRAMESHIFT

P92
JAK2 c.1680delT(p.F560Lfs FRAMESHIFT

P92
GNAS c.794G>A(p.R265H) MISSENSE

P92
BRCA2 c.7505G>A(p.R2502H MISSENSE

P92
DENND1A c.1268C>T(p.A423V) MISSENSE

P92
GRIN2A c.3505C>T(p.R1169W MISSENSE

P92
CHD8 c.3338G>A(p.R1113H MISSENSE

P92
BRD4 c.1001A>G(p.D334G) MISSENSE

P92
EPHA2 c.719delG(p.G240Vfs FRAMESHIFT

P92
SPRED1 c.234delA(p.D79Tfs*4 FRAMESHIFT

P92
YAP1 c.147delC(p.A50Pfs*2 FRAMESHIFT

P92
PALB2 c.3256C>T(p.R1086*) STOP GAINED
| Gene   | Mutation | Description       |
|--------|----------|-------------------|
| KRAS  | c.35G>A(p.G12D) | MISSENSE         |
| GNAS  | c.1882C>T(p.P628S) | MISSENSE         |
| TNFAIP3 | c.296G>A(p.G99D) | MISSENSE         |
| JAK2  | c.3338G>A(p.R1113H) | MISSENSE         |
| RNF43 | c.350delG(p.R117Pfs*FRAMESHIFT) | MISSSE          |
| TTF1  | c.821delA(p.K274fs*FRAMESHIFT) | MISSSE          |
| PREX2 | c.1693delT(p.S565fs*FRAMESHIFT) | MISSSE          |
| GNAS  | c.767C>T(p.A256V) | MISSENSE         |
| CHD8  | c.7721A>T(p.D2574fs*FRAMESHIFT) | MISSSE          |
| MYCN  | c.613G>A(p.V205M) | MISSSE          |
| APC   | c.4715T>A(p.I1572N) | MISSSE         |
| KMT2A | c.92dupC(p.R32fs*1 FRAMESHIFT) | MISSSE         |
| BAP1  | c.1259G>A(p.G420E) | MISSSE         |
| FAT1  | c.11597C>T(p.A3866V) | MISSSE         |
| RUNX1 | c.1319C>T(p.A440V) | MISSSE         |
| CHD4  | c.5270G>A(p.R1757H) | MISSSE         |
| ERBB3 | c.2000G>A(p.R667H) | MISSSE         |
| BAX   | c.121delG(p.E41Rfs*1FRAMESHIFT) | FRAMESHIFT   |
| SMO   | c.1202C>T(p.A401V) | MISSSE         |
| IFNGR1 | c.486T>A(p.D162E) | MISSSE         |
| FAT1  | c.8799delA(p.G2934V) | FRAMESHIFT   |
| PARP1 | c.628G>T(p.G210C) | MISSSE         |
| POT1  | c.260A>G(p.Q87R) | MISSSE         |
| PGR   | c.1223G>A(p.G408D) | MISSSE         |
| EXT2  | c.1771T>C(p.S591P) | MISSSE         |
| BTK   | c.216T>G(p.N72K) | MISSSE         |
| LRP1B | c.8528G>A(p.R2843Q) | MISSSE         |
| MSH6  | c.741delA(p.K247Nfs*FRAMESHIFT) | MISSSE       |
| BLM   | c.2268dupA(p.D757R) | FRAMESHIFT   |
| SETBP1 | c.440delA(p.N147fs*FRAMESHIFT) | MISSSE       |
| KIT   | c.1015G>A(p.A339T) | MISSSE         |
| EPHA5 | c.1151G>A(p.G384D) | MISSSE         |
| RNF43 | c.65dupA(p.A23Gfs*1FRAMESHIFT) | MISSSE       |
| KMT2A | c.126delC(p.P45fs*1FRAMESHIFT) | MISSSE     |
| PRKCI | c.826delA(p.T276Qfs*FRAMESHIFT) | MISSSE       |
| TSC1  | c.2931dupA(p.L978Tfs*FRAMESHIFT) | MISSSE       |
| KIT   | c.1015G>A(p.A339T) | MISSSE         |
| EPHA2 | c.1379dupC(p.P461Afs*FRAMESHIFT) | MISSSE       |
| PBRM1 | c.4484A>G(p.Q1495R) | MISSSE         |
| FBXW7 | c.1513C>T(p.R505C) | MISSSE         |
| EP300 | c.1511G>A(p.R504Q) | MISSSE         |
| KMT2B | c.5006C>T(p.A1669V) | MISSSE         |
| RICTOR | c.436G>T(p.A146S) | MISSSE         |
| ATR   | c.3799G>A(p.V1267I) | MISSSE         |
| NTRK2 | c.2375G>A(p.R792H) | MISSSE         |
| Gene  | Variant  | Description        |
|-------|----------|--------------------|
| NTRK2 | c.1816G>A | p.E606K  |
| GRM3  | c.755T>C  | p.I252T   |
| FANCI | c.686T>C  | p.V229A   |
| THADA | c.5147A>G | p.N1716S |
| AKT1  | c.320C>T  | p.A107V   |
| FLT3  | c.38G>A   | p.G13D    |
| KRAS  | c.38G>A   | p.G13D    |
| APC   | c.1147dupG | p.A383G |
| FAT1  | c.4653delT | p.N1551K |
| TP53  | c.335_338dupGCTT | p.FRAMESHIFT |
| LRP1B | c.4520A>G | p.Q1507R |
| YAP1  | c.229A>G  | p.T77A    |
| PBRM1 | c.4565A>G | p.Q1522R |
| APC   | c.2413C>T | p.R805*   |
| FLT1  | Amplication |        |
| BAI3  | c.3978C>G | p.S1326R |
| SMAD4 | Deletion   |         |
| APC   | c.4737delT | p.I1580Q |
| ERBB2 | c.2033G>A  | p.R678Q  |
| GNAS  | c.1532G>A  | p.R511H  |
| TP53  | c.586C>T   | p.R196*   |
| CD274 | c.374G>A   | p.R125Q  |
| AKT1  | c.49G>A    | p.E17K   |
| KRAS  | c.38G>A    | p.G13D   |
| SMAD4 | c.1082G>A  | p.R361H  |
| SETD2 | c.2489A>T  | p.E830V  |
| FANCA | c.4285G>A  | p.D1429N |
| PIK3CA| c.1345C>A  | p.P449T  |
| EPHA3 | c.1895T>G  | p.F632C  |
| TP53  | c.770T>G   | p.L257R  |
| KRAS  | c.35G>A    | p.G12D   |
| APC   | c.1234C>T  | p.Q412*  |
| ERBB3 | c.3701C>T  | p.S1234F |
| KMT2C | c.2742T>A  | p.S914R  |
| CTNNB1| c.770C>T   | p.T257I  |
| SMAD4 | c.1521A>T  | p.K507N  |
| PKHD1 | c.8011C>T  | p.R2671* |
| STAT3 | c.2147C>T  | p.T716M  |
| KRAS  | c.35G>A    | p.G12D   |
| NRAS  | c.35G>A    | p.G12D   |
| TP53  | c.817C>T   | p.R273C  |
| PREX2 | c.3245G>A  | p.S1082N |
| RNF43 | c.1A>T     | p.M1?    |
| LZTR1 | c.27dupG   | p.Q10Afs |

**Notes:**
- **MISSENSE** indicates a missense mutation (amino acid change).
- **FRAMESHIFT** indicates a frameshift mutation (alteration in the reading frame of the gene).
- **STOP GAINED** indicates a stop codon is gained due to the mutation.
- **STOP LOST** indicates a stop codon is lost due to the mutation.
- **Amplification** indicates an amplification event in the gene.
- **Deletion** indicates a deletion event in the gene.
| Gene | Mutation | Type | Description |
|------|----------|------|-------------|
| ESR1 | c.296C>T(p.P99L) | MISSENSE | |
| NF1  | c.130_131dupAT(p.N- | FRAMESHIFT | |
| KMT2C| c.1149G>A(p.W383*) | STOP GAINED | |
| KRAS | c.40G>A(p.V14I) | MISSENSE | |
| B2M  | c.43_44delCT(p.L15Ff | FRAMESHIFT | |
| TNFAIP3| c.365T>C(p.L122P) | MISSENSE | |
| PTEN | c.700C>T(p.R234W) | MISSENSE | |
| ERCC5| c.1372G>A(p.V458I) | MISSENSE | |
| FAT1 | c.9683delC(p.P3282L) | FRAMESHIFT | |
| CTNNB1| c.134C>T(p.S45F) | MISSENSE | |
| PTCH1 | c.3490G>A(p.V1164I) | MISSENSE | |
| GRIN2A| c.2840G>A(p.R1675H | MISSENSE | |
| LZTR1 | c.17G>A(p.S6N) | MISSENSE | |
| POLE | c.5024G>A(p.R1675H | MISSENSE | |
| PARK2| c.621A>T(p.E207D) | MISSENSE | |
| ARID1A| c.4030dupT(p.S1344F | FRAMESHIFT | |
| FLT1 | c.2144C>T(p.T715M) | MISSENSE | |
| PLK1 | c.661G>A(p.E221K) | MISSENSE | |
| CYLD | c.115C>A(p.L39I) | MISSENSE | |
| MTO | c.406A>G(p.R136T) | MISSENSE | |
| NOTCH2| c.6862C>T(p.P2288S) | MISSENSE | |
| RET | c.2789C>T(p.T930M) | MISSENSE | |
| CDKN2A| c.386A>G(p.Y129C) | MISSENSE | |
| CREBBP| c.7150delC(p.H2384T | FRAMESHIFT | |
| CHD8 | c.7112dupA(p.N2371 | FRAMESHIFT | |
| ARID1B| c.4913G>A(p.R1638H | MISSENSE | |
| QKI | c.401delA(p.K134Rfs* | FRAMESHIFT | |
| BRD4 | c.2006G>A(p.R669H) | MISSENSE | |
| NOTCH1| c.3511-1G>A | SPLICE | |
| IKBKE | c.560G>A(p.R187Q) | MISSENSE | |
| TSHR | c.50G>T(p.R17M) | MISSENSE | |
| CTCF | c.610dupA(p.T204Nfs | FRAMESHIFT | |
| LRP1B| c.7834delC(p.Q2612R | FRAMESHIFT | |
| ERBB2| c.3017G>A(p.R1006H | MISSENSE | |
| MLLT4| c.164_165delTT(p.F55 | FRAMESHIFT | |
| BLM | c.1544delA(p.N515M | FRAMESHIFT | |
| RAD50| c.2801delA(p.N934Rfs | FRAMESHIFT | |
| FAT1 | c.5854G>A(p.V1952I) | MISSENSE | |
| MLH1 | c.1331dupA(p.N444K | FRAMESHIFT | |
| ERBB2| c.877G>A(p.A293T) | MISSENSE | |
| GATA4| c.572G>T(p.S191I) | MISSENSE | |
| MTOR | c.5819C>G(p.P1940R) | MISSENSE | |
| BRCA2 | c.5200G>A(p.E1734K) | MISSENSE | |
| PIK3CA| c.323G>A(p.R108H) | MISSENSE | |
P99  BAP1  c.1702G>T(p.G568W) MISSENSE
P99  CYSLTR2  c.442C>T(p.H148Y) MISSENSE
P99  FLCN  c.1285delC(p.H429Tf FRAMESHIFT
P99  PARK2  c.1310C>T(p.P437L) MISSENSE
P99  PKHD1  c.10487T>C(p.L3496S MISSENSE
P99  ARID1A  c.736G>A(p.A246T) MISSENSE
P99  KRAS  c.38G>A(p.G13D) MISSENSE
P99  ARID1B  c.4156A>G(p.D1390G MISSENSE
P99  AXL  c.874dupC(p.H292Pfs FRAMESHIFT
P99  FLT3  c.106G>A(p.V36I) MISSENSE
P99  B2M  c.45_48delTTCT (p.S16 FRAMESHIFT
P99  RNF43  c.902C>T(p.P301H) MISSENSE
P99  ARID2  c.2119G>A(p.A707T) MISSENSE
P99  PIK3R1  c.244delA(p.R82Fs*3: FRAMESHIFT
P99  AXL  c.195dupC(p.E66Rfs*1 FRAMESHIFT
P100  APC  c.4147dupA(p.M1383 FRAMESHIFT
P100  CYLD  c.2758C>G(p.L920V) MISSENSE
P100  LRP1B  c.10912C>T(p.R3638V MISSENSE
P100  TP53  c.404G>A(p.C135Y) MISSENSE
P100  APC  c.532-1G>C SPLICE
P101  CDKN1C  c.190G>T(p.D64Y) MISSENSE
P101  PIK3CA  Amplication
P101  EGFR  c.2303G>A(p.S768N) MISSENSE
P101  NFE2L2  c.235G>C(p.E79Q) MISSENSE
P101  AR  c.277G>A(p.E93K) MISSENSE
P102  KRAS  c.35G>A(p.G12D) MISSENSE
P102  TP53  c.733G>A(p.G245S) MISSENSE
P102  APC  c.3919delA(p.I1307*) FRAMESHIFT
P102  ERBB3  c.1064C>T(p.T355I) MISSENSE
P102  APC  c.3940_3943dupAGG FRAMESHIFT
P102  FBXW7  c.931T>C(p.W311R) MISSENSE
P102  FANCD2  c.3095A>G(p.N1032S MISSENSE
P103  TP53  c.742C>T(p.R248W) MISSENSE
P103  APC  c.4198delT(p.S1400Rf FRAMESHIFT
P103  ERCC5  c.1951G>A(p.D651N) MISSENSE
P103  PTK2  Amplication
P103  MYC  Amplication
P103  EWSR1  c.1279G>A(p.V427M) MISSENSE
P103  PLCB4  c.2890A>G(p.I964V) MISSENSE
P103  KRAS  c.35G>A(p.G12D) MISSENSE
P104  TOP1  Amplication
P104  FLT4  c.1309C>T(p.R437C) MISSENSE
P104  FLT1  c.2603C>T(p.T868M) MISSENSE
P104  ZNF217  Amplification
P104  GNAS  Amplification
P104  TP53  c.129delGinsAA(p.M4) FRAMESHIFT
P104  APC  c.1861dupA(p.T621N) FRAMESHIFT
P104  SRC  Amplification
P104  FGFR1  Amplification
P104  CTNNB1  c.1522A>C(p.K508Q) MISSENSE
P105  TP53  c.216dupC(p.V73Rfs*) FRAMESHIFT
P105  ZNF217  Amplification
P105  APC  c.646C>T(p.R216*) STOP GAINED
P105  TOP1  Amplification
P105  GNAS  Amplification
P105  TOP1  Amplification
P105  ZNF217  Amplification
P105  GNAS  Amplification
P106  FGFR1  Amplification
P106  AR  c.1615C>T(p.R539C) MISSENSE
P106  APC  c.4666dupA(p.T1556D) FRAMESHIFT
P106  ARID1A  c.2988+1G>A SPLICE
P106  ESR1  c.146C>T(p.P49L) MISSENSE
P106  ESR1  c.1507C>T(p.R503W) MISSENSE
P106  KRAS  c.34G>T(p.G12C) MISSENSE
P106  TP53  c.743G>A(p.R248Q) MISSENSE
P107  EGFR  EGFR:exon4~VOPP1: epsilon FUSION
P107  SMAD4  c.1577A>T(p.E526V) MISSENSE
P107  FLT4  c.2630C>A(p.A877D) MISSENSE
P107  EGFR  Amplification
P107  ATM  c.3019G>A(p.D1007N) MISSENSE
P107  EGFR  EGFR:exon25~SEPT14 FUSION
P107  APC  c.4037C>A(p.S1346*) STOP GAINED
P107  APC  c.3842C>A(p.S1281*) STOP GAINED
P107  ATRX  c.5566+1G>T SPLICE
P107  TP53  c.733G>A(p.G245S) MISSENSE
P107  EGFR  Amplification
P108  AMER1  c.1921C>T(p.R641*) STOP GAINED
P108  INPP4B  c.1704T>G(p.I568M) MISSENSE
P108  SMAD2  c.1387delT(p.C463Af) FRAMESHIFT
P108  SMAD2  c.1279C>T(p.R427*) STOP GAINED
P108  KRAS  c.35G>T(p.G12V) MISSENSE
P108  SMAD3  c.1102C>T(p.R368*) STOP GAINED
P108  APC  c.4348C>T(p.R1450*) STOP GAINED
P108  APC  c.1548+1G>A SPLICE
P109  PAK3  c.611G>A(p.R204H) MISSENSE
P109  CTNNB1  c.199G>A(p.E67K) MISSENSE
P109  TP53  c.733G>A(p.G245S)  MISSENSE
P109  NRAS  c.181C>A(p.Q61K)  MISSENSE
P109  APC  c.1495C>T(p.R499*)  STOP GAINED
P109  ALK  c.2144G>A(p.G715E)  MISSENSE
P109  FLCN  c.1429C>T(p.R477*)  STOP GAINED
P109  APC  c.688_692delCGTAT(p.FRAMESHIFT
P110  KRAS  c.181C>A(p.Q61K)  MISSENSE
P110  RAD50  FSD1L:exon1~RAD50: FUSION
P110  C11orf30  c.3130G>C(p.V1044L)  MISSENSE
P110  PIK3CA  c.1634A>G(p.E545G)  MISSENSE
P110  APC  c.4473dupT(p.A1492C  FRAMESHIFT
P110  TP53  c.380C>T(p.S127F)  MISSENSE
P110  APC  c.2475T>A(p.Y825*)  STOP GAINED
P110  FGFR3  Amplication
P111  XPC  c.991-2A>T  SPLICE
P111  POLE  c.5648C>T(p.A1883V)  MISSENSE
P111  CDK12  c.2336G>A(p.R779H)  MISSENSE
P111  PREX2  c.1835A>G(p.K612R)  MISSENSE
P111  EPHA3  c.2849A>G(p.D950G)  MISSENSE
P111  ARAF  c.563G>A(p.R188H)  MISSENSE
P111  RPTOR  c.1336C>T(p.R446W)  MISSENSE
P111  KRAS  c.38G>A(p.G13D)  MISSENSE
P111  PGR  c.2404T>G(p.W802G)  MISSENSE
P111  PRSS1  c.134A>C(p.Y45S)  MISSENSE
P111  CTCF  c.134C>T(p.T45M)  MISSENSE
P111  MED12  c.2770C>T(p.L924M)  MISSENSE
P111  AIP  c.332G>A(p.G111D)  MISSENSE
P111  BRCA2  c.1813dupA(p.I605Nf FRAMESHIFT
P111  KMT2A  c.2318delC(p.P773Rfs FRAMESHIFT
P111  PBRM1  c.1600C>T(p.R534*)  STOP GAINED
P111  RB1  c.137+1G>A  SPLICE
P111  AMER1  c.2908C>T(p.P970S)  MISSENSE
P111  FANCC  c.1082G>A(p.R361Q)  MISSENSE
P111  TSC2  c.4727C>T(p.T1576M)  MISSENSE
P111  KMT2B  c.8132G>A(p.R2711H)  MISSENSE
P111  FBXW7  c.2065C>T(p.R689W)  MISSENSE
P111  GRN2A  c.1510C>T(p.R504W)  MISSENSE
P111  APC  c.7811A>C(p.N2604T)  MISSENSE
P111  NOTCH1  c.4249C>T(p.P1417T)  MISSENSE
P111  GRIN2A  c.3238C>T(p.H1080Y)  MISSENSE
P111  MSH6  c.3261delC(p.F1088SI FRAMESHIFT
P111  KMT2A  c.6190C>T(p.R2064C)  MISSENSE
P111  PTCH1  c.1274C>T(p.T425M)  MISSENSE
P111  NNX2-1  c.90G>T(p.E30D)  MISSENSE
| Gene   | Chromatin Alteration | Description          |
|--------|----------------------|----------------------|
| PKHD1  | c.8141G>A(p.R2714Q)  | MISSENSE             |
| EPHA2  | c.524G>A(p.R175H)    | MISSENSE             |
| ALK    | c.83G>A(p.R28H)      | MISSENSE             |
| AMER1  | c.1801C>T(p.R601*)   | STOP GAINED          |
| GNAS   | c.139G>A(p.E47K)     | MISSENSE             |
| FOXP1  | c.1154T>A(p.L385Q)   | MISSENSE             |
| BRD4   | c.137delC(p.P46Rfs*4) | FRAMESHIFT          |
| IGF2   | c.518dupC(p.E174Rfs) | FRAMESHIFT          |
| ZNF703 | c.61G>A(p.G21S)      | MISSENSE             |
| GNAS   | c.139A>G(p.Q320R)    | MISSENSE             |
| LRP1B  | c.9325A>G(p.R3109G)  | MISSENSE             |
| CASP8  | c.1288C>T(p.R430*)   | STOP GAINED          |
| GRM3   | c.1079A>G(p.Q360R)   | MISSENSE             |
| FANCA  | c.4303G>A(p.A1435T)  | MISSENSE             |
| GRM3   | c.1241G>A(p.N414S)   | MISSENSE             |
| RECQL4 | c.385C>T(p.P129S)    | MISSENSE             |
| FOXP1  | c.1540C>T(p.R514C)   | MISSENSE             |
| ERBB4  | c.946G>A(p.E316K)    | MISSENSE             |
| ATM    | c.1661C>T(p.T554M)   | MISSENSE             |
| BAP1   | c.862G>A(p.A288T)    | MISSENSE             |
| DOT1L  | c.3158C>T(p.A1053V)  | MISSENSE             |
| APC    | c.4438C>T(p.Q1480*)  | STOP GAINED          |
| NSD1   | c.7697C>T(p.T2566I)  | MISSENSE             |
| CDK12  | c.4177G>T(p.G1393W)  | MISSENSE             |
| PLK1   | c.1711G>A(p.G571S)   | MISSENSE             |
| FAT1   | c.9683dupC(p.V3229X) | FRAMESHIFT          |
| APC    | c.694C>T(p.R232*)    | STOP GAINED          |
| PTPN13 | c.3069-2A>G          | SPLICE               |
| KDM5A  | c.4234G>T(p.G1412C)  | MISSENSE             |
| TERT   | c.2776G>A(p.G926S)   | MISSENSE             |
| LRP1B  | c.1675C>T(p.R559C)   | MISSENSE             |
| PKHD1  | c.3385G>A(p.G1129R)  | MISSENSE             |
| CYP2D6 | c.508C>T(p.R170C)    | MISSENSE             |
| KLLN   | c.238A>C(p.S80R)     | MISSENSE             |
| DNMT3A | c.2149A>G(p.N717D)   | MISSENSE             |
| JAK1   | c.2580delA(p.K860Nf) | FRAMESHIFT          |
| RNF43  | c.1976delG(p.G659Vf) | FRAMESHIFT          |
| DDR2   | c.778C>T(p.R260W)    | MISSENSE             |
| KRAS   | c.351A>C(p.K117N)    | MISSENSE             |
| FLT4   | c.1002C>G(p.S334R)   | MISSENSE             |
| FLT3   | Amplication          |                      |
| MYC    | Amplication          |                      |
| PIK3CA | c.1633G>A(p.E545K)   | MISSENSE             |
| FLT1   | Amplication          |                      |
| Gene  | Mutation       | Type          | Description               |
|-------|----------------|---------------|---------------------------|
| SMARCA4 | c.3728G>A      | p.R1243Q     | MISSENSE                 |
| CDC7  | c.1480G>A      | p.V494I      | MISSENSE                 |
| ARID1A| c.1650dupC     | p.Y551Lfs    | FRAMESHIFT               |
| TP53  | c.844C>T       | p.R282W      | MISSENSE                 |
| PIK3CA| c.328_330delGAA| p.E INFRAME INDEL |
| KRAS  | c.35G>T        | p.G12V       | MISSENSE                 |
| APC   | c.1847delT     | p.L616WF     | FRAMESHIFT               |
| APC   | c.4241delT     | p.V1414E     | FRAMESHIFT               |
| APC   | c.2626C>T      | p.R876*      | STOP GAINED              |
| PIK3CA| c.353G>A       | p.G118D      | MISSENSE                 |
| AMER1 | c.1150G>T      | p.E384*      | STOP GAINED              |
| PPP2R1A| c.1051G>A     | p.G351S      | MISSENSE                 |
| PRF1  | c.1648C>T      | p.R550W      | MISSENSE                 |
| TP53  | c.659A>G       | p.Y220C      | MISSENSE                 |
| LZTR1 | c.1260+2_1260+8del| SPLICE   |
| KRAS  | c.35G>A        | p.G12D       | MISSENSE                 |
| KRAS  | c.35G>A        | p.G12D       | MISSENSE                 |
| APC   | c.646C>T       | p.R216*      | STOP GAINED              |
| ARID1A| c.1020_1031delGGCC| INFRAME INDEL |
| CASP8 | c.1252C>G      | p.L418V      | MISSENSE                 |
| SMAD4 | c.1082G>A      | p.R361H      | MISSENSE                 |
| FBXW7 | c.832C>T       | p.R278*      | STOP GAINED              |
| ARID2 | c.5371_5372delAA| p. FRAMESHIFT |
| PRKCI | c.1438C>T      | p.R480C      | MISSENSE                 |
| MED12 | c.4036C>T      | p.R1346C     | MISSENSE                 |
| APC   | c.3927_3931delAA| p. FRAMESHIFT |
| AXL   | c.502C>G       | p.P168A      | MISSENSE                 |
| BRD4  | c.3197T>G      | p.L1066R     | MISSENSE                 |
| BMPR1A| c.905G>T      | p.W302L      | MISSENSE                 |
| PRF1  | c.1537A>C      | p.N513H      | MISSENSE                 |
| FANCM | IGR (downstream RPL FUSION) |
| APC   | c.2815A>T      | p.K939*      | STOP GAINED              |
| PLCB4 | c.1629_1630invAG| p. MISSENSE |
| SDHB  | c.807G>C       | p.M269I      | MISSENSE                 |
| KRAS  | c.35G>T        | p.G12V       | MISSENSE                 |
| XPC   | c.1425delG     | p.T476Qf     | FRAMESHIFT               |
| APC   | c.4285C>T      | p.Q1429*     | STOP GAINED              |
| TERT  | c.-124C>T     |             | MISSENSE                 |
| AR    | c.1025C>T      | p.P342L      | MISSENSE                 |
| AR    | c.2290T>A      | p.Y764N      | MISSENSE                 |
| AR    | c.2272G>A      | p.V758I      | MISSENSE                 |
| NF1   | c.2001+2T>C   |             | SPLICE                   |
| TP53  | c.492G>T       | p.K164N      | MISSENSE                 |
| Gene   | Mutation          | Type       |
|--------|-------------------|------------|
| PDK1   | c.1292C>T(p.T431M) | MISSENSE   |
| PBRM1  | c.1847A>C(p.K616T) | MISSENSE   |
| CHD8   | c.4457T>C(p.L1486T) | MISSENSE   |
| ERCC4  | c.2215G>A(p.G739S) | MISSENSE   |
| TEK    | c.2232delG(p.K745Rfs*291) | FRAMESHIFT |
| NQO1   | c.746delA(p.N249Tfs*291) | FRAMESHIFT |
| CASP8  | c.1337T>C(p.L446P) | MISSENSE   |
| POLE   | c.1676G>A(p.R559Q) | MISSENSE   |
| PDGFRA | c.493G>T(p.E165*)  | STOP GAINED |
| KMT2B  | c.7921G>A(p.A2641T) | MISSENSE   |
| DPYD   | c.893C>T(p.T298M)  | MISSENSE   |
| PTPN13 | c.4160A>G(p.D1387G) | MISSENSE   |
| MTO1   | c.6725A>G(p.H2242R) | MISSENSE   |
| FANCA  | c.926G>A(p.S309N)  | MISSENSE   |
| CYP2C9 | c.1003C>T(p.R335W) | MISSENSE   |
| CB1B   | c.1787G>T(p.R596L) | MISSENSE   |
| EXT2   | c.28C>T(p.R10W)    | MISSENSE   |
| TET2   | c.3770C>T(p.T1257M) | MISSENSE   |
| POLE   | c.6842A>G(p.N2281S) | MISSENSE   |
| MLH3   | c.1755dupA(p.E586Rfs*30) | FRAMESHIFT |
| EXT1   | c.369delA(p.E125Rfs*6) | FRAMESHIFT |
| GATA6  | c.1087C>T(p.Q363*)  | STOP GAINED |
| ASXL1  | c.1085+1G>A        | SPLICE     |
| IGF1R  | c.419C>T(p.A140V)  | MISSENSE   |
| RAC3   | c.73A>G(p.T25A)    | MISSENSE   |
| NOTCH2 | c.1499G>T(p.S500I) | MISSENSE   |
| ZNF703 | c.1316G>A(p.G439D) | MISSENSE   |
| RET    | c.2657G>A(p.R886Q) | MISSENSE   |
| AMER1  | c.519delT(p.F173Lfs*7) | FRAMESHIFT |
| MLH3   | c.1755delA(p.E586afs*4) | FRAMESHIFT |
| IGF1R  | c.1636T>C(p.S546P) | MISSENSE   |
| TSC2   | c.2416G>A(p.V806M) | MISSENSE   |
| TP53   | c.817C>T(p.R273C)  | MISSENSE   |
| SGK1   | c.1148G>A(p.R383Q) | MISSENSE   |
| NOTCH3 | c.4999C>T(p.R1667C) | MISSENSE   |
| FAT1   | c.4355A>G(p.H1452R) | MISSENSE   |
| CXCR4  | c.739G>A(p.A247T)  | MISSENSE   |
| BRCA2  | c.9097delA(p.T3033fs*12) | FRAMESHIFT |
| AXL    | c.1010delC(p.P337Lfs*23) | FRAMESHIFT |
| CREBBP | c.1270C>T(p.R424*)  | STOP GAINED |
| ESR1   | c.425G>A(p.R142H)  | MISSENSE   |
| CDKN1C | c.91C>A(p.R31S)    | MISSENSE   |
| GRM8   | c.2309C>T(p.T777M) | MISSENSE   |
| NOTCH2 | c.1259C>T(p.A420V) | MISSENSE   |
| Gene   | Mutation             | Type       |
|--------|----------------------|------------|
| PTK2   | c.2825C>T(p.T942M)   | MISSENSE   |
| PKHD1  | c.10388T>C(p.R3435S) | MISSENSE   |
| MDM4   | c.535G>A(p.A179T)    | MISSENSE   |
| RECQL4 | c.3011C>T(p.A1004V)  | MISSENSE   |
| POLE   | c.100C>T(p.R34C)     | MISSENSE   |
| MSH2   | c.2605G>A(p.A869T)   | MISSENSE   |
| TP53   | c.604C>T(p.R202C)    | MISSENSE   |
| ALK    | c.3178C>T(p.R1060C)  | MISSENSE   |
| MSH6   | c.718C>T(p.R240*)    | STOP GAINED|
| ARID1B | c.3890C>T(p.T1297M)  | MISSENSE   |
| TOP2A  | c.4303A>G(p.R1435G)  | MISSENSE   |
| THADA  | c.1783G>T(p.G595*)   | STOP GAINED|
| PTEN   | c.253+2T>C           | SPLICE     |
| NOTCH1 | c.7327G>A(p.V2443N)  | MISSENSE   |
| DOT1L  | c.146C>T(p.P49L)     | MISSENSE   |
| EGFR   | c.2320G>A(p.V774M)   | MISSENSE   |
| GATA3  | c.379C>T(p.P127S)    | MISSENSE   |
| FLT4   | c.3208C>T(p.R1070C)  | MISSENSE   |
| PDE11A | c.475C>T(p.R159W)    | MISSENSE   |
| TET2   | c.4351C>T(p.R1451W)  | MISSENSE   |
| PPP2R1A| c.548G>A(p.R183Q)    | MISSENSE   |
| FLT1   | c.406G>A(p.V136I)    | MISSENSE   |
| FANCA  | c.3788_3790delTCT    | INFRAME INDEL|
| LRP1B  | c.12869A>C(p.E4290K) | MISSENSE   |
| DENND1A| c.2969C>T(p.A990V)   | MISSENSE   |
| CTNNB1 | c.1000G>A(p.E334K)   | MISSENSE   |
| ARID2  | c.940C>T(p.R314C)    | MISSENSE   |
| KMT2B  | c.4357A>G(p.S1453G)  | MISSENSE   |
| EPAS1  | c.610A>G(p.N204D)    | MISSENSE   |
| AXIN2  | c.1883G>T(p.R628L)   | MISSENSE   |
| TTF1   | c.836dupA(p.K280Efs) | FRAMESHIFT |
| TGFB2R2| c.382_383delIAA(p.K1FAMESHIFT) |
| PMS1   | c.418+2T>C           | SPLICE     |
| ALK    | c.1918G>A(p.G640R)   | MISSENSE   |
| SUFU   | c.1274C>T(p.A425V)   | MISSENSE   |
| SPRY4  | c.815T>A(p.L272H)    | MISSENSE   |
| STAG2  | c.1642C>T(p.L548F)   | MISSENSE   |
| POLD1  | c.2096C>T(p.S699F)   | MISSENSE   |
| NOTCH3 | c.5006G>A(p.R1669H)  | MISSENSE   |
| PTCH1  | c.3606dupC(p.S1203F) | FRAMESHIFT |
| APC    | c.4348C>T(p.R1450*)  | STOP GAINED|
| FBXW7  | c.1094G>A(p.W365*)   | STOP GAINED|
| ERCC4  | c.289C>T(p.R97C)     | MISSENSE   |
| LRP1B  | c.2803G>A(p.G935R)   | MISSENSE   |
| Gene  | Mutation      | Type       |
|-------|---------------|------------|
| EPHA2 | c.1703G>A(p.R568H) | MISSENSE  |
| FLT3  | c.1349C>T(p.A450V)    | MISSENSE  |
| ALK   | c.4522G>A(p.G1508S)  | MISSENSE  |
| FGFR1 | c.452G>A(p.R151Q)    | MISSENSE  |
| DOT1L | c.2680G>A(p.A894T)    | MISSENSE  |
| SDHA  | c.1771G>A(p.A591T)    | MISSENSE  |
| CCND1 | c.452G>A(p.R151Q)    | MISSENSE  |
| DOT1L | c.2680G>A(p.A894T)    | MISSENSE  |
| FLT1  | c.842G>A(p.R281Q)     | MISSENSE  |
| TP53  | c.742C>T(p.R248W)     | MISSENSE  |
| KRAS  | c.35G>A(p.G12D)       | MISSENSE  |
| APC   | c.4260_4261delC(p.FRAMESHIFT) | |
| TUBB3 | c.904G>A(p.A302T)     | MISSENSE  |
| FLT1  | c.842G>A(p.R281Q)     | MISSENSE  |
| TP53  | c.742C>T(p.R248W)     | MISSENSE  |
| KRAS  | c.35G>A(p.G12D)       | MISSENSE  |
| APC   | c.4260_4261delC(p.FRAMESHIFT) | |
| TUBB3 | c.904G>A(p.A302T)     | MISSENSE  |
| FLT1  | c.842G>A(p.R281Q)     | MISSENSE  |
| TP53  | c.742C>T(p.R248W)     | MISSENSE  |
| ARID1A| c.688delG(p.A230Rfs)  | FRAMESHIFT|
| BRAF  | c.784C>A(p.Q262K)     | MISSENSE  |
| PKHD1 | c.6951G>T(p.L2317F)   | MISSENSE  |
| APC   | c.2825delA(p.N942Ifs) | FRAMESHIFT|
| NRAS  | c.181C>A(p.Q61K)      | MISSENSE  |
| SMAD2 | c.1395C>A(p.S465R)    | MISSENSE  |
| CDC73 | c.1208C>G(p.T403S)    | MISSENSE  |
| APC   | c.4393_4394delAG(p.FRAMESHIFT) | |
| ARID1B| c.6413T>G(p.L2138R)   | MISSENSE  |
| AMER1 | c.1372_1373delAG(p.FRAMESHIFT) | |
| TP53  | c.1052delA(p.K351Rfs) | FRAMESHIFT|
| FBXW7 | c.1739A>G(p.H580R)    | MISSENSE  |
| KRAS  | c.35G>A(p.G12D)       | MISSENSE  |
| APC   | c.3927_3931delAAAG(p.FRAMESHIFT) | |
| TP53  | c.844C>T(p.R282W)     | MISSENSE  |
| APC   | c.3055G>T(p.G1019X)   | STOP GAINED|
| GRIN2A| c.2084G>A(p.R695Q)    | MISSENSE  |
| ERBB2 | c.2033G>A(p.R678Q)    | MISSENSE  |
| TUBB4A| c.811G>A(p.A271T)     | MISSENSE  |
| TEK   | c.2957C>T(p.S986F)    | MISSENSE  |
| TP53  | c.1010G>T(p.R337L)    | MISSENSE  |
| CTNNB1| c.12_215del          | LARGE FRAGMENT D |
| Gene     | Mutation Description | Mutation Type |
|----------|----------------------|---------------|
| KRAS    | c.35G>C(p.G12A)     | MISSENSE     |
| STK11   | c.998G>A(p.R333H)   | MISSENSE     |
| APC     | EPB41L4A:exon9~APC:exon68 Del | FUSION |
| TP53    | c.227_279del(p.A76Vfs:FRAMESHIFT) | |
| SMAD4   | c.1081C>T(p.R361C)  | MISSENSE     |
| TP53    | c.524G>A(p.R175H)   | MISSENSE     |
| APC     | c.3957dupT(p.V1320Cfs:FRAMESHIFT) | |
| PTEN    | Deletion             |               |
| NRAS    | c.182A>G(p.Q61R)    | MISSENSE     |
| PTEN    | Deletion             |               |
| SMAD4   | SMAD4:exon5~IGR (dFUSION) | |
| EZH2    | c.758C>A(p.P253Q)   | MISSENSE     |
| KMT2A   | c.8264T>C(p.I2755T) | MISSENSE     |
| DICER1  | c.3661A>T(p.N1221Y) | MISSENSE     |
| NOTCH1  | c.1270G>A(p.E424K)  | MISSENSE     |
| TP53    | c.690delC(p.T231Pfs*11) | FRAMESHIFT |
| KDR     | c.2571C>A(p.D857E)  | MISSENSE     |
| KRAS    | c.35G>A(p.G12D)     | MISSENSE     |
| FAT1    | c.4035G>A(p.W1345*) | STOP GAINED |
| PIK3CA  | c.353G>A(p.G118D)   | MISSENSE     |
| APC     | c.1659delG(p.W553Cfs*1) | FRAMESHIFT |
| DDR2    | c.1894C>G(p.L632V)  | MISSENSE     |
| APC     | c.4666dupA(p.T1556Nfs3) | FRAMESHIFT |
| NTRK3   | c.1934G>A(p.R645H)  | MISSENSE     |
| AMER1   | c.368T>A(p.L123*)   | STOP GAINED |
| KRAS    | c.38G>A(p.G13D)     | MISSENSE     |
| TP53    | c.558_559delTG(p.D181fs) | FRAMESHIFT |
| ERBB4   | c.3222A>C(p.E1074D) | MISSENSE     |
| APC     | c.4216C>T(p.Q1406*) | STOP GAINED |
| CDK12   | CDK12:exon1~RPTOR FUSION | |
| TP53    | c.272G>A(p.W91*)    | STOP GAINED |
| MLLT3   | c.1049C>G(p.S350X)  | STOP GAINED |
| CDH1    | c.1320G>T(p.K440N)  | MISSENSE     |
| KRAS    | c.436G>A(p.A146T)   | MISSENSE     |
| IGF1R   | c.2278G>A(p.A760T)  | MISSENSE     |
| BRD4    | c.3796G>A(p.E1266K) | MISSENSE     |
| TP53    | c.366_373dupGACTTGCCFUSION | FRAMESHIFT |
| MAX     | c.453C>A(p.S151R)   | MISSENSE     |
| NRG1    | c.805T>C(p.Y269H)   | MISSENSE     |
| AXIN2   | c.799_800delGT(p.V26;FRAMESHIFT) | |
| RARA    | c.1072G>T(p.A358S)  | MISSENSE     |
| ESR1    | c.338C>T(p.P113L)   | MISSENSE     |
| SMAD2   | c.215C>A(p.T72N)    | MISSENSE     |
| CREBBP  | c.1714G>T(p.G572X)  | STOP GAINED |
| EP300   | c.3590G>T(p.R1197M) | MISSENSE     |
| ROS1    | c.1792T>A(p.F598I)  | MISSENSE     |
| Gene  | Mutation                  | Type       |
|-------|---------------------------|------------|
| PIK3R1 | c.1392_1403delTAGATT      | INFRAME INDEL |
| NTRK1  | c.310C>T(p.R104C)        | MISSENSE   |
| KRAS   | c.38G>A(p.G13D)          | MISSENSE   |
| MED12  | c.117_134delGAATGTA      | INFRAME INDEL |
| SMAD4  | c.1082G>A(p.R361H)       | MISSENSE   |
| RNF43  | c.1A>T(p.M1?)            | START LOST |
| GNAS   | c.1631G>A(p.R544Q)       | MISSENSE   |
| CEP57  | p.P4700H (c.C1409A)      | MISSENSE   |
| TP53   | p.I195T (c.T584C)        | MISSENSE   |
| KRAS   | p.G12D (c.G35A)          | MISSENSE   |
| APC    | p.R1450X (c.C4348T)      | STOP GAINED|
| CEP57  | p.P470H (c.C1409A)       | MISSENSE   |
| KRAS   | p.G12D (c.G35A)          | MISSENSE   |
| TP53   | p.I195T (c.T584C)        | MISSENSE   |
| APC    | p.R1450X (c.C4348T)      | STOP GAINED|
| DipyT  | c.299T>C(p.F100S)        | MISSENSE   |
| KRAS   | p.G12D (c.G35A)          | MISSENSE   |
| TP53   | p.I195T (c.T584C)        | MISSENSE   |
| APC    | p.R1450X (c.C4348T)      | STOP GAINED|
| APC    | p.675_680delAAAGGA       | INFRAME INDEL |
| PTPRD  | c.4987A>G(p.S1663G)      | MISSENSE   |
| APC    | c.2083C>T(p.Q695*)       | STOP GAINED|
| FBXW7  | c.1513C>T(p.R505C)       | MISSENSE   |
| FBXW7  | c.832C>T(p.R278*)        | STOP GAINED|
| PKI3CA | c.1633G>A(p.E545K)       | MISSENSE   |
| SMAD4  | c.1067C>T(p.P356L)       | MISSENSE   |
| APC    | c.4348C>T(p.R1450*)      | STOP GAINED|
| IFNGR1 | c.45C>G(p.S15R)          | MISSENSE   |
| STAG2  | c.1865A>C(p.K622T)       | MISSENSE   |
| APC    | c.4099C>T(p.Q1367X)      | STOP GAINED|
| TNFRSF11F | c.400G>A(p.A134T)  | MISSENSE   |
| SMARCB1| Deletion                 |            |
| TP53   | Deletion                 |            |
| TP53   | c.524G>A(p.R175H)        | MISSENSE   |
| BRD4   | p.R1130L(c.G3389T)       | MISSENSE   |
| CTNNB1 | p.Q302fs (c.905delA)     | FRAMESHIFT |
| FANCC  | p.T420M (c.C1259T)       | MISSENSE   |
| NOTCH2 | p.R1931H (c.G5792A)      | MISSENSE   |
| POLH   | p.R234H (c.G701A)        | MISSENSE   |
| SLC3A2 | p.K298fs (c.892delA)     | FRAMESHIFT |
| ABCB1  | p.V125fs (c.373_374ins)  | FRAMESHIFT |
| CDA    | p.A101V (c.C302T)        | MISSENSE   |
| GNAS   | p.D141G (c.A422G)        | MISSENSE   |
| STAT3  | p.V310M (c.G928A)        | MISSENSE   |
| PDGFRB | p.A168T (c.G502A)        | MISSENSE   |
| EP300  | p.Q1522H (c.G4566T)      | MISSENSE   |
| NTRK3  | p.D476G (c.A1427G)       | MISSENSE   |
| FAT1   | p.T874P (c.A2620C)       | MISSENSE   |
| CCNE1  | p.E45A (c.A134C)         | MISSENSE   |
| Gene      | Protein Name | Mutation Description | Type       |
|-----------|--------------|----------------------|------------|
| MDM2      | p.P319fs    | c.955delC             | Frameshift |
| HDAC9     | p.R440H     | c.G1319A              | Missense   |
| CDK6      | p.R214H     | c.G641A               | Missense   |
| FANCD2    | p.a.C2495-2G|                      |            |
| FBXW7     | p.R441Q     | c.G1322A              | Missense   |
| APC       | p.R1788C    | c.C5362T              | Missense   |
| FANCA     | p.a.A1443T  | c.G4327A              | Missense   |
| ERBB2IP   | p.D947V     | c.A2840T              | Missense   |
| ATRX      | p.R1518K    | c.G4553A              | Missense   |
| MYCN      | p.A354V     | c.C1061T              | Missense   |
| KDR       | p.V665M     | c.G1993A              | Missense   |
| MAP3K1    | p.R208X     | (c.C622T)             | Stop gained |
| TP53      | p.R213Q     | (c.G638A)             | Missense   |
| APC       | p.K1462fs   | (c.4384_4386delC)     | Frameshift |
| SGK1      | p.G234X     | (c.G700T)             | Stop gained |
| GRM8      | p.359fs     | (c.1077_1078insC)     | Frameshift |
| HGF       | c.G747-1T   |                      |            |
| SETBP1    | p.Q1213R    | c.A3638G              | Missense   |
| EPHA5     | p.C102Y     | c.G305A               | Missense   |
| SMARCA4   | p.g.19D     | c.G56A                | Missense   |
| CREBBP    | p.R2344W    | (c.C7030T)            | Missense   |
| IKBKE     | p.A338V     | (c.C1013T)            | Missense   |
| MLLT4     | p.M85V      | (c.A253G)             | Missense   |
| BRCA2     | p.G602fs    | (c.1806delA)          | Frameshift |
| IDH1      | p.I99M      | (c.A297G)             | Missense   |
| PTCH1     | p.V1126I    | (c.G3376A)            | Missense   |
| MUTYH     | p.R414C     | (c.C1240T)            | Missense   |
| SMO       | p.H692fs    | (c.2076delC)          | Frameshift |
| MPL       | p.H624N     | (c.C1870A)            | Missense   |
| MITF      | p.A277T     | (c.G829A)             | Missense   |
| IGF1R     | p.R391H     | (c.G1172A)            | Missense   |
| ERCC4     | p.F761L     | (c.T2283G)            | Missense   |
| FLT3      | p.S633G     | (c.A1897G)            | Missense   |
| NTRK1     | p.Y72H      | (c.T214C)             | Missense   |
| RPTOR     | p.V596M     | (c.G1786A)            | Missense   |
| ARID1A    | p.R1461X    | (c.C4381T)            | Stop gained |
| TTF1      | p.K274fs    | (c.821delA)           | Frameshift |
| FBXW7     | p.G670X     | (c.G2008T)            | Stop gained |
| GATA6     | p.G305D     | (c.G914A)             | Missense   |
| GNA11     | p.E49K      | (c.G145A)             | Missense   |
| CREBBP    | p.D1143G    | (c.A3428G)            | Missense   |
| ASXL1     | p.G642fs    | (c.1926_1927delC)     | Frameshift |
| AXL       | p.63fs      | (c.189_190insC)       | Frameshift |
| JARID2    | p.M683I     | (c.G2049A)            | Missense   |
| CBLB      | p.G661R     | (c.G1981A)            | Missense   |
| TAP1      | p.V254A     | (c.T761C)             | Missense   |
| PTPN13    | p.P225H     | (c.C674A)             | Missense   |
| Gene       | Mutation Description                  | Type of Change |
|------------|--------------------------------------|----------------|
| FANCL      | p.T304A (c.A910G)                     | MISSENSE       |
| APC        | p.R805X (c.C2413T)                    | STOP GAINED    |
| DNMT3A     | p.R209H (c.G626A)                     | MISSENSE       |
| MTOR       | p.R460X (c.C1378T)                    | STOP GAINED    |
| CTNNB1     | p.R542C (c.C1624T)                    | MISSENSE       |
| KIT        | p.P627L (c.C1880T)                    | MISSENSE       |
| WRN        | p.E3fs (c.8delA)                      | FRAMESHIFT     |
| FANCI      | p.1268_1269del (c.380:STOP LOST)      |                |
| APC        | p.A971T (c.G2911A)                    | MISSENSE       |
| RRM1       | p.R499H (c.G1496A)                    | MISSENSE       |
| NTRK2      | p.R734C (c.C2200T)                    | MISSENSE       |
| RECQL4     | p.M748L (c.A2242T)                    | MISSENSE       |
| JARID2     | p.K565R (c.A1694G)                    | MISSENSE       |
| PDGFRB     | p.T369M (c.C1106T)                    | MISSENSE       |
| NOTCH1     | p.R1762W (c.C5284T)                   | MISSENSE       |
| MAP3K4     | p.K158fs (c.472delA)                  | FRAMESHIFT     |
| MSH6       | p.P59S (c.C175T)                      | MISSENSE       |
| ROS1       | p.P1315H (c.C3944A)                   | MISSENSE       |
| RPTOR      | p.A1269T (c.G3805A)                   | MISSENSE       |
| XPC        | p.A783T (c.G2347A)                    | MISSENSE       |
| MLH3       | p.K585fs (c.1755delA)                 | FRAMESHIFT     |
| RPTOR      | p.V1147I (c.G3439A)                   | MISSENSE       |
| ERBB4      | p.S701N (c.G2102A)                    | MISSENSE       |
| GRIN2A     | p.L63P (c.T188C)                      | MISSENSE       |
| KRAS       | p.G13D (c.G38A)                       | MISSENSE       |
| KDM5A      | p.K1199fs (c.3597_3597del)            | FRAMESHIFT     |
| AXIN2      | p.A684V (c.C2051T)                    | MISSENSE       |
| POLE       | p.L2096V (c.C6286G)                   | MISSENSE       |
| LZTR1      | p.L816Q (c.T2447A)                    | MISSENSE       |
| SMARCB1    | p.A109fs (c.327_328del)               | FRAMESHIFT     |
| SMARCA4    | p.A1168T (c.G3502A)                   | MISSENSE       |
| ATM        | p.I2230V (c.A6688G)                   | MISSENSE       |
| SMARCA4    | p.R425Q (c.G1274A)                    | MISSENSE       |
| PIK3R1     | p.G644D (c.G1931A)                    | MISSENSE       |
| PARK2      | p.L112F (c.G334T)                     | MISSENSE       |
| MGMT       | p.L2P (c.T5C)                         | MISSENSE       |
| TP53       | p.R158H (c.G473A)                     | MISSENSE       |
| TTF1       | p.H285R (c.A854G)                     | MISSENSE       |
| ATR        | p.A1570T (c.G4708A)                   | MISSENSE       |
| C11ORF30   | p.G923D (c.G2768A)                    | MISSENSE       |
| MAP3K4     | p.R346C (c.C1036T)                    | MISSENSE       |
| PALB2      | p.M296fs (c.886delA)                  | FRAMESHIFT     |
| BAX        | p.M388fs (c.114delG)                  | FRAMESHIFT     |
| TOP2A      | p.P8H (c.C23A)                        | MISSENSE       |
| RAF1       | p.A142V (c.C425T)                     | MISSENSE       |
| FAT1       | p.V1783M (c.G5347A)                   | MISSENSE       |
| CDKN1A     | p.F51V (c.T151G)                      | MISSENSE       |
P132  DUSP2  p.A64T (c.G190A)  MISSENSE
P133  NF1  p.D1313V (c.A3938T)  MISSENSE
P133  PGR  p.C480S (c.G1439C)  MISSENSE
P133  APC  p.S1327X (c.C3980G)  STOP GAINED
P133  APC  p.Q1406X (c.C4216T)  STOP GAINED
P133  ESR1  p.P333S (c.C997T)  MISSENSE
P133  HNF1A  p.S225C (c.A673T)  MISSENSE
P133  KRAS  p.Q61R (c.A182G)  MISSENSE
P133  PDGFRB  p.A789S (c.G2365T)  MISSENSE
P133  TP53  p.R273H (c.G818A)  MISSENSE
P133  FLT4  p.G276D (c.G827A)  MISSENSE