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- Trockeneiszuschlag
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### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Data Sheet

**Product Name:** CancerSeq™ Paraffin Tumor Tissue Sections

**Catalog No.:** T2235086-ST

**Lot No.:** B702064

**Species:** Human

**Tissue Type:** Adult Tumor

**Tissue Name:** Breast

**Donor Information:** Y0557

**Female:** 35 year(s) old

**Clinical Diagnosis:** Lobular Carcinoma

## Summary of 48 Biomarkers Sequencing Information

| Gene Name | # Variant | Genome Build | Chromosome | Gene Name | # Variant | Genome Build | Chromosome |
|-----------|-----------|--------------|------------|-----------|-----------|--------------|------------|
| ABL1      | 6         | hg19         | chr9       | JAK2      | 1         | hg19         | chr9       |
| AKT1      | 1         | hg19         | chr14      | JAK3      | 6         | hg19         | chr19      |
| ALK       | 2         | hg19         | chr2       | KDR       | 15        | hg19         | chr4       |
| APC       | 11        | hg19         | chr5       | KIT       | 13        | hg19         | chr4       |
| ATM       | 29        | hg19         | chr11      | KRAS      | 7         | hg19         | chr12      |
| BRAF      | 3         | hg19         | chr7       | MET       | 11        | hg19         | chr7       |
| CDH1      | 6         | hg19         | chr16      | MLH1      | 0         | hg19         | chr3       |
| CDKN2A1   | 0         | hg19         | chr9       | MPL       | 2         | hg19         | chr1       |
| CSF1R     | 1         | hg19         | chr5       | NOTCH1    | 8         | hg19         | chr9       |
| CTNNB1    | 3         | hg19         | chr3       | NPM1      | 2         | hg19         | chr5       |
| EGFR      | 7         | hg19         | chr7       | NRAS      | 1         | hg19         | chr1       |
| ERBB2     | 4         | hg19         | chr17      | PDGFRA    | 6         | hg19         | chr4       |
| ERBB4     | 17        | hg19         | chr2       | PIK3CA    | 7         | hg19         | chr3       |
| FBXW7     | 7         | hg19         | chr4       | PTEN      | 19        | hg19         | chr10      |
| FGFR1     | 5         | hg19         | chr8       | PTPN11    | 2         | hg19         | chr12      |
| FGFR2     | 8         | hg19         | chr10      | RB1       | 13        | hg19         | chr13      |
| FGFR3     | 9         | hg19         | chr4       | RET       | 8         | hg19         | chr10      |
| FLT3      | 10        | hg19         | chr13      | SMAD4     | 10        | hg19         | chr18      |
| GNA11     | 13        | hg19         | chr19      | SMARCB1   | 7         | hg19         | chr22      |
| GNAQ      | 29        | hg19         | chr9       | SMO       | 7         | hg19         | chr7       |
| GNAS      | 1         | hg19         | chr20      | SRC       | 0         | hg19         | chr20      |
| HNF1A     | 14        | hg19         | chr12      | STK11     | 9         | hg19         | chr19      |
| HRAS      | 1         | hg19         | chr11      | TP53      | 12        | hg19         | chr17      |
| IDH1      | 1         | hg19         | chr2       | VHL       | 4         | hg19         | chr3       |

### UK & Rest of World

184 Milton Park, Abingdon  
OX14 4SE, Oxon, UK  
Tel: +44 (0) 1235 828 200  
Fax: +44 (0) 1235 820 482

### Switzerland

Centro Nord-Sud 2E  
CH-6934 Bioggio-Lugano  
Tel: +41 (0) 91 604 55 22  
Fax: +41 (0) 91 605 17 85

### Deutschland

Bockenheimer Landstr. 17/19  
60325 Frankfurt/Main  
Tel: +49 (0) 69 779099  
Fax: +49 (0) 69 13376880

### North America

23591 El Toro Rd, Suite #180  
Lake Forest, CA 92630  
Tel: +1 800 987 0985  
Fax: +1 949 265 7703

**amsbio**

info@amsbio.com

www.amsbio.com  
AMS Biotechnology

### Details of Variants

| Column Header            | Definition                                                                                                                                                                                                                |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>         | The target region for sequencing.                                                                                                                                                                                         |
| <b>dbSNP ID</b>          | The identifier for the variant in the NCBI dbSNP database.                                                                                                                                                                |
| <b>Genome Build</b>      | The version of the human genome sequence database.                                                                                                                                                                        |
| <b>Chromosome</b>        | The chromosome where the target region is located.                                                                                                                                                                        |
| <b>Coordinate</b>        | The genomic position of the variant in the build of the genome database.                                                                                                                                                  |
| <b>Variant Type</b>      | The variant type, which can be either SNP or indel.                                                                                                                                                                       |
| <b>Reference</b>         | The reference allele of the variation.                                                                                                                                                                                    |
| <b>Allele Type</b>       | The type of variation, either heterozygous or homozygous.                                                                                                                                                                 |
| <b>Call</b>              | The allele call, including both the reference and alternate alleles.                                                                                                                                                      |
| <b>Coverage</b>          | The number of reads that cover the region.                                                                                                                                                                                |
| <b>Variant Frequency</b> | The fraction of reads for the sample that includes the variant. For example, if the reference base at a particular position is A and sample 1 has 60 A reads and 40 T reads, then the SNP has a variant frequency of 0.4. |
| <b>Score</b>             | A prediction of the probability of an incorrect base call.                                                                                                                                                                |

| Gene Name | dbSNP ID   | Genome Build | Chromosome | Coordinate | Variant Type | Reference | Allele Type | Call | Coverage | Variant Frequency | Score |
|-----------|------------|--------------|------------|------------|--------------|-----------|-------------|------|----------|-------------------|-------|
| ABL1_1    |            | hg19         | chr9       | 1.34E+08   | SNP          | G         | het         | G/T  | 64       | 0.0469            | 24    |
| ABL1_10   |            | hg19         | chr9       | 1.34E+08   | SNP          | C         | het         | C/T  | 190      | 0.0368            | 31    |
| ABL1_10   |            | hg19         | chr9       | 1.34E+08   | SNP          | C         | het         | C/T  | 284      | 0.0282            | 26    |
| ABL1_16   |            | hg19         | chr9       | 1.34E+08   | SNP          | C         | het         | C/T  | 217      | 0.0276            | 22    |
| ABL1_16   |            | hg19         | chr9       | 1.34E+08   | SNP          | C         | het         | C/T  | 222      | 0.027             | 21    |
| ABL1_9    |            | hg19         | chr9       | 1.34E+08   | SNP          | C         | het         | C/T  | 56       | 0.0714            | 35    |
| AKT1      |            | hg19         | chr14      | 1.05E+08   | SNP          | C         | het         | C/T  | 274      | 0.0292            | 27    |
| ALK2      |            | hg19         | chr2       | 29443793   | SNP          | C         | het         | C/T  | 720      | 0.025             | 37    |
| ALK2      |            | hg19         | chr2       | 29443802   | SNP          | C         | het         | C/T  | 721      | 0.0222            | 29    |
| APC1      |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 345      | 0.029             | 30    |
| APC1      |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 342      | 0.0234            | 21    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | G         | het         | G/A  | 355      | 0.0225            | 20    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 538      | 0.0204            | 20    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | G         | het         | G/A  | 885      | 0.0215            | 31    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 378      | 0.0265            | 27    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/A  | 391      | 0.0307            | 37    |
| APC3_42   | rs74535574 | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 551      | 0.0272            | 37    |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | C         | het         | C/T  | 549      | 0.0219            | 24    |
| APC3_42   | rs41115    | hg19         | chr5       | 1.12E+08   | SNP          | G         | het         | G/A  | 661      | 0.9955            | 100   |
| APC3_42   |            | hg19         | chr5       | 1.12E+08   | SNP          | G         | het         | G/A  | 232      | 0.0259            | 20    |
| ATM1      |            | hg19         | chr11      | 1.08E+08   | Insertion    | A         | het         | -/T  | 273      | 0.0549            | 75    |
| ATM1      |            | hg19         | chr11      | 1.08E+08   | Deletion     | AT        | het         | T/-  | 273      | 0.0989            | 100   |
| ATM1      |            | hg19         | chr11      | 1.08E+08   | SNP          | A         | het         | A/T  | 277      | 0.0361            | 38    |
| ATM10     |            | hg19         | chr11      | 1.08E+08   | SNP          | A         | het         | A/G  | 145      | 0.0414            | 31    |
| ATM11     |            | hg19         | chr11      | 1.08E+08   | SNP          | C         | het         | C/T  | 268      | 0.0261            | 22    |
| ATM11     |            | hg19         | chr11      | 1.08E+08   | SNP          | C         | het         | C/T  | 280      | 0.025             | 21    |
| ATM12     |            | hg19         | chr11      | 1.08E+08   | SNP          | C         | het         | C/T  | 165      | 0.0364            | 28    |
| ATM14     |            | hg19         | chr11      | 1.08E+08   | Deletion     | AT        | het         | T/-  | 189      | 0.0317            | 25    |
| ATM14     |            | hg19         | chr11      | 1.08E+08   | Deletion     | AT        | het         | T/-  | 191      | 0.0419            | 38    |
| ATM15     |            | hg19         | chr11      | 1.08E+08   | SNP          | A         | het         | A/G  | 365      | 0.0356            | 45    |
| ATM16     |            | hg19         | chr11      | 1.08E+08   | SNP          | A         | het         | A/G  | 237      | 0.0338            | 31    |
| ATM17     |            | hg19         | chr11      | 1.08E+08   | SNP          | T         | het         | T/G  | 76       | 0.0395            | 21    |
| ATM17     |            | hg19         | chr11      | 1.08E+08   | SNP          | A         | het         | A/T  | 91       | 0.0549            | 34    |
| ATM17     | rs227075   | hg19         | chr11      | 1.08E+08   | SNP          | T         | het         | T/C  | 90       | 0.7111            | 100   |

|             |            |      |       |          |           |      |     |       |     |        |     |
|-------------|------------|------|-------|----------|-----------|------|-----|-------|-----|--------|-----|
| ATM17       |            | hg19 | chr11 | 1.08E+08 | Insertion | G    | het | -/T   | 45  | 0.0444 | 20  |
| ATM18       |            | hg19 | chr11 | 1.08E+08 | SNP       | T    | het | T/G   | 215 | 0.0512 | 55  |
| ATM18       | rs664143   | hg19 | chr11 | 1.08E+08 | SNP       | A    | het | A/G   | 269 | 0.7435 | 100 |
| ATM18       |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 264 | 0.0379 | 40  |
| ATM18       |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 265 | 0.0302 | 28  |
| ATM19       |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 180 | 0.0278 | 20  |
| ATM19       |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 346 | 0.0231 | 20  |
| ATM3        |            | hg19 | chr11 | 1.08E+08 | SNP       | A    | het | A/T   | 124 | 0.0403 | 28  |
| ATM3        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 154 | 0.039  | 30  |
| ATM3        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 158 | 0.038  | 29  |
| ATM4        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 163 | 0.0368 | 28  |
| ATM4        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 182 | 0.0385 | 32  |
| ATM6        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 225 | 0.0356 | 33  |
| ATM7        |            | hg19 | chr11 | 1.08E+08 | SNP       | T    | het | T/G   | 323 | 0.0279 | 27  |
| ATM7        |            | hg19 | chr11 | 1.08E+08 | SNP       | C    | het | C/T   | 402 | 0.0299 | 35  |
| BRAF1       |            | hg19 | chr7  | 1.4E+08  | SNP       | C    | het | C/T   | 581 | 0.0258 | 34  |
| BRAF28      |            | hg19 | chr7  | 1.4E+08  | SNP       | C    | het | C/T   | 467 | 0.0214 | 21  |
| BRAF28      |            | hg19 | chr7  | 1.4E+08  | SNP       | C    | het | C/T   | 509 | 0.0255 | 31  |
| CDH1_1      |            | hg19 | chr16 | 68835689 | SNP       | C    | het | C/T   | 419 | 0.0215 | 20  |
| CDH1_1      |            | hg19 | chr16 | 68835690 | SNP       | C    | het | C/T   | 416 | 0.0288 | 34  |
| CDH1_1      |            | hg19 | chr16 | 68835741 | SNP       | C    | het | C/T   | 421 | 0.0238 | 24  |
| CDH1_2      |            | hg19 | chr16 | 68846249 | SNP       | A    | het | A/G   | 200 | 0.03   | 23  |
| CDH1_3      |            | hg19 | chr16 | 68847288 | SNP       | C    | het | C/A   | 257 | 0.0389 | 41  |
| CDH1_3      |            | hg19 | chr16 | 68847289 | SNP       | C    | het | C/A   | 281 | 0.0356 | 38  |
| CSF1R1_3    |            | hg19 | chr5  | 1.49E+08 | SNP       | C    | het | C/T   | 136 | 0.0441 | 33  |
| CTNNB1_1_16 |            | hg19 | chr3  | 41266089 | SNP       | C    | het | C/T   | 414 | 0.0242 | 24  |
| CTNNB1_1_16 |            | hg19 | chr3  | 41266113 | SNP       | C    | het | C/T   | 415 | 0.0217 | 20  |
| CTNNB1_1_16 |            | hg19 | chr3  | 41266126 | SNP       | C    | het | C/T   | 415 | 0.0241 | 24  |
| EGFR1       |            | hg19 | chr7  | 55211199 | SNP       | C    | het | C/T   | 243 | 0.0412 | 43  |
| EGFR1       |            | hg19 | chr7  | 55211200 | SNP       | A    | het | A/G   | 232 | 0.0259 | 20  |
| EGFR3       |            | hg19 | chr7  | 55233080 | SNP       | C    | het | C/T   | 373 | 0.0268 | 28  |
| EGFR4       |            | hg19 | chr7  | 55241745 | SNP       | C    | het | C/T   | 724 | 0.0249 | 37  |
| EGFR44      |            | hg19 | chr7  | 55249131 | SNP       | G    | het | G/A   | 637 | 0.0204 | 22  |
| EGFR9       |            | hg19 | chr7  | 55242491 | SNP       | A    | het | A/G   | 335 | 0.0239 | 21  |
| EGFR9       |            | hg19 | chr7  | 55242526 | SNP       | T    | het | T/C   | 335 | 0.0239 | 21  |
| ERBB2_1     |            | hg19 | chr17 | 37880333 | SNP       | C    | het | C/T   | 403 | 0.0323 | 41  |
| ERBB2_13    |            | hg19 | chr17 | 37881393 | SNP       | C    | het | C/T   | 288 | 0.0313 | 31  |
| ERBB2_4     |            | hg19 | chr17 | 37881010 | SNP       | C    | het | C/T   | 130 | 0.0385 | 27  |
| ERBB2_4     |            | hg19 | chr17 | 37881038 | SNP       | C    | het | C/T   | 196 | 0.0408 | 37  |
| ERBB4_10    |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 226 | 0.0531 | 61  |
| ERBB4_10    |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 224 | 0.0536 | 61  |
| ERBB4_10    |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 234 | 0.0342 | 31  |
| ERBB4_10    |            | hg19 | chr2  | 2.13E+08 | SNP       | A    | het | A/G   | 236 | 0.0254 | 20  |
| ERBB4_11    |            | hg19 | chr2  | 2.13E+08 | SNP       | T    | het | T/G   | 163 | 0.0491 | 43  |
| ERBB4_11    |            | hg19 | chr2  | 2.13E+08 | SNP       | T    | het | T/G   | 171 | 0.0351 | 27  |
| ERBB4_5     |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 451 | 0.0222 | 22  |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | Deletion  | TAA  | het | AA/-  | 67  | 0.1642 | 100 |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | Deletion  | TA   | het | A/-   | 67  | 0.403  | 100 |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | Deletion  | TAAA | het | AAA/- | 67  | 0.0448 | 23  |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | Insertion | T    | het | -/A   | 67  | 0.0896 | 52  |
| ERBB4_6_7   | rs74499552 | hg19 | chr2  | 2.13E+08 | SNP       | A    | het | A/G   | 24  | 0.0833 | 27  |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | SNP       | A    | het | A/G   | 73  | 0.0548 | 30  |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | SNP       | A    | het | A/G   | 73  | 0.0548 | 30  |
| ERBB4_6_7   |            | hg19 | chr2  | 2.13E+08 | SNP       | A    | het | A/G   | 74  | 0.0541 | 30  |
| ERBB4_8     |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 324 | 0.0401 | 51  |
| ERBB4_9     |            | hg19 | chr2  | 2.13E+08 | SNP       | C    | het | C/T   | 607 | 0.0198 | 20  |
| FBXW7_2     |            | hg19 | chr4  | 1.53E+08 | SNP       | C    | het | C/T   | 179 | 0.0615 | 64  |
| FBXW7_5     |            | hg19 | chr4  | 1.53E+08 | SNP       | G    | het | G/A   | 114 | 0.0351 | 22  |

|           |           |      |       |          |           |      |     |       |     |        |     |
|-----------|-----------|------|-------|----------|-----------|------|-----|-------|-----|--------|-----|
| FBXW7_5   |           | hg19 | chr4  | 1.53E+08 | SNP       | A    | het | A/G   | 126 | 0.0317 | 20  |
| FBXW7_5   |           | hg19 | chr4  | 1.53E+08 | SNP       | C    | het | C/T   | 126 | 0.0317 | 20  |
| FBXW7_5   |           | hg19 | chr4  | 1.53E+08 | SNP       | C    | het | C/T   | 125 | 0.032  | 20  |
| FBXW7_5   |           | hg19 | chr4  | 1.53E+08 | SNP       | C    | het | C/T   | 61  | 0.0492 | 24  |
| FBXW7_8   |           | hg19 | chr4  | 1.53E+08 | SNP       | G    | het | G/T   | 333 | 0.033  | 37  |
| FGFR1_1   | rs2280846 | hg19 | chr8  | 38282294 | SNP       | C    | het | C/T   | 337 | 0.362  | 100 |
| FGFR1_1   |           | hg19 | chr8  | 38282327 | SNP       | C    | het | C/T   | 339 | 0.0324 | 37  |
| FGFR1_2   |           | hg19 | chr8  | 38285945 | SNP       | G    | het | G/T   | 495 | 0.0424 | 78  |
| FGFR1_2   |           | hg19 | chr8  | 38285946 | SNP       | G    | het | G/T   | 532 | 0.0301 | 44  |
| FGFR1_2   |           | hg19 | chr8  | 38286007 | SNP       | C    | het | C/T   | 714 | 0.021  | 25  |
| FGFR2_1   |           | hg19 | chr10 | 1.23E+08 | SNP       | T    | het | T/G   | 351 | 0.0228 | 20  |
| FGFR2_2   |           | hg19 | chr10 | 1.23E+08 | SNP       | C    | het | C/T   | 516 | 0.0213 | 22  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | SNP       | C    | het | C/T   | 231 | 0.026  | 20  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | Deletion  | GGC  | het | GC/-  | 160 | 0.0438 | 36  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | Insertion | A    | het | -/T   | 178 | 0.0337 | 26  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | SNP       | G    | het | G/T   | 164 | 0.0305 | 22  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | SNP       | G    | het | G/C   | 184 | 0.0489 | 46  |
| FGFR2_5   |           | hg19 | chr10 | 1.23E+08 | SNP       | C    | het | C/T   | 151 | 0.0464 | 38  |
| FGFR3_1_2 |           | hg19 | chr4  | 1803642  | SNP       | C    | het | C/T   | 27  | 0.0741 | 26  |
| FGFR3_3_4 |           | hg19 | chr4  | 1806134  | SNP       | C    | het | C/T   | 57  | 0.0526 | 26  |
| FGFR3_3_4 |           | hg19 | chr4  | 1806234  | SNP       | C    | het | C/T   | 90  | 0.0444 | 26  |
| FGFR3_5_7 | rs7688609 | hg19 | chr4  | 1807894  | SNP       | G    | het | G/A   | 45  | 1      | 100 |
| FGFR3_5_7 |           | hg19 | chr4  | 1807897  | SNP       | C    | het | C/T   | 45  | 0.0444 | 20  |
| FGFR3_5_7 |           | hg19 | chr4  | 1807938  | SNP       | C    | het | C/T   | 59  | 0.0678 | 34  |
| FGFR3_5_7 |           | hg19 | chr4  | 1807981  | SNP       | C    | het | C/T   | 58  | 0.0517 | 25  |
| FGFR3_8   |           | hg19 | chr4  | 1808361  | SNP       | C    | het | C/T   | 45  | 0.0667 | 29  |
| FGFR3_9   |           | hg19 | chr4  | 1808965  | SNP       | C    | het | C/T   | 98  | 0.0408 | 25  |
| FLT3_1    |           | hg19 | chr13 | 28592653 | SNP       | C    | het | C/T   | 234 | 0.0256 | 20  |
| FLT3_13   |           | hg19 | chr13 | 28602331 | SNP       | C    | het | C/A   | 182 | 0.0385 | 32  |
| FLT3_13   |           | hg19 | chr13 | 28602333 | SNP       | C    | het | C/A   | 197 | 0.0406 | 37  |
| FLT3_13   |           | hg19 | chr13 | 28602345 | SNP       | C    | het | C/T   | 282 | 0.0355 | 38  |
| FLT3_13   |           | hg19 | chr13 | 28602376 | SNP       | C    | het | C/T   | 299 | 0.0368 | 42  |
| FLT3_14   |           | hg19 | chr13 | 28608279 | SNP       | C    | het | C/T   | 220 | 0.0273 | 21  |
| FLT3_14   |           | hg19 | chr13 | 28608292 | SNP       | C    | het | C/T   | 224 | 0.0446 | 46  |
| FLT3_22   | rs2491231 | hg19 | chr13 | 28610183 | SNP       | A    | het | A/G   | 65  | 1      | 100 |
| FLT3_22   |           | hg19 | chr13 | 28610186 | SNP       | G    | het | G/A   | 65  | 0.1231 | 75  |
| FLT3_22   |           | hg19 | chr13 | 28610206 | SNP       | G    | het | G/A   | 64  | 0.0625 | 33  |
| GNA11_4   |           | hg19 | chr19 | 3114872  | SNP       | T    | het | T/C   | 26  | 0.0769 | 26  |
| GNA11_4   |           | hg19 | chr19 | 3114907  | SNP       | G    | het | G/A   | 32  | 0.0625 | 24  |
| GNA11_4   |           | hg19 | chr19 | 3114957  | SNP       | T    | het | T/C   | 23  | 0.087  | 28  |
| GNA11_4   |           | hg19 | chr19 | 3114978  | SNP       | C    | het | C/A   | 17  | 0.1176 | 31  |
| GNA11_4   |           | hg19 | chr19 | 3115026  | SNP       | C    | het | C/T   | 122 | 0.0328 | 21  |
| GNA11_5   |           | hg19 | chr19 | 3118850  | SNP       | G    | het | G/A   | 44  | 0.0682 | 30  |
| GNA11_5   |           | hg19 | chr19 | 3118934  | SNP       | G    | het | G/A   | 46  | 0.0652 | 29  |
| GNA11_6   | rs4900    | hg19 | chr19 | 3119239  | SNP       | C    | het | C/T   | 96  | 0.5521 | 100 |
| GNA11_6   |           | hg19 | chr19 | 3119302  | SNP       | G    | het | G/A   | 200 | 0.03   | 23  |
| GNA11_7   |           | hg19 | chr19 | 3120907  | SNP       | C    | het | C/T   | 109 | 0.0367 | 23  |
| GNA11_7   |           | hg19 | chr19 | 3120982  | SNP       | C    | het | C/T   | 180 | 0.0389 | 33  |
| GNA11_7   |           | hg19 | chr19 | 3121117  | SNP       | G    | het | G/A   | 129 | 0.031  | 20  |
| GNA11_7   |           | hg19 | chr19 | 3121150  | SNP       | C    | het | C/T   | 61  | 0.0492 | 24  |
| GNAQ_4    |           | hg19 | chr9  | 80412450 | SNP       | T    | het | T/G   | 123 | 0.0569 | 44  |
| GNAQ_5    |           | hg19 | chr9  | 80409455 | SNP       | A    | het | A/G   | 229 | 0.0349 | 32  |
| GNAQ_5    |           | hg19 | chr9  | 80409493 | SNP       | C    | het | C/A   | 103 | 0.1262 | 100 |
| GNAQ_6    |           | hg19 | chr9  | 80343332 | SNP       | G    | het | G/T   | 291 | 0.0241 | 20  |
| GNAQ_6    |           | hg19 | chr9  | 80343407 | SNP       | C    | het | C/T   | 472 | 0.0318 | 44  |
| GNAQ_6    |           | hg19 | chr9  | 80343433 | SNP       | C    | het | C/T   | 518 | 0.0232 | 26  |
| GNAQ_6    |           | hg19 | chr9  | 80343470 | SNP       | G    | het | G/A   | 42  | 0.0476 | 20  |
| GNAQ_6    |           | hg19 | chr9  | 80343473 | SNP       | T    | het | T/C   | 40  | 0.05   | 21  |
| GNAQ_6    |           | hg19 | chr9  | 80343475 | SNP       | T    | het | T/C   | 42  | 0.0476 | 20  |
| GNAQ_6    |           | hg19 | chr9  | 80343497 | SNP       | G    | het | G/A   | 41  | 0.0488 | 21  |
| GNAQ_6    |           | hg19 | chr9  | 80343517 | SNP       | A    | het | A/T   | 28  | 0.0714 | 25  |
| GNAQ_6    |           | hg19 | chr9  | 80343587 | Deletion  | GAAA | het | AAA/- | 116 | 0.0345 | 22  |
| GNAQ_6    |           | hg19 | chr9  | 80343587 | Deletion  | GA   | het | A/-   | 116 | 0.3017 | 100 |

|          |            |      |       |          |           |       |     |        |     |        |     |
|----------|------------|------|-------|----------|-----------|-------|-----|--------|-----|--------|-----|
| GNAQ_6   | rs34210272 | hg19 | chr9  | 80343587 | Insertion | G     | het | -/A    | 116 | 0.1207 | 100 |
| GNAQ_6   |            | hg19 | chr9  | 80343587 | Deletion  | GAA   | het | AA/-   | 116 | 0.0603 | 45  |
| GNAQ_6   |            | hg19 | chr9  | 80343605 | Deletion  | GA    | het | A/-    | 124 | 0.0323 | 21  |
| GNAQ_7   |            | hg19 | chr9  | 80336165 | SNP       | C     | het | C/T    | 106 | 0.0377 | 23  |
| GNAQ_7   |            | hg19 | chr9  | 80336226 | SNP       | C     | het | C/T    | 100 | 0.1    | 80  |
| GNAQ_7   |            | hg19 | chr9  | 80336354 | SNP       | T     | het | T/G    | 332 | 0.0392 | 50  |
| GNAQ_7   |            | hg19 | chr9  | 80336359 | Deletion  | ACTGT | het | CTGT/- | 349 | 0.4556 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336430 | Insertion | C     | het | -/ATCA | 384 | 0.3776 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336431 | Insertion | T     | het | -/A    | 385 | 0.3896 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336435 | SNP       | G     | het | G/T    | 384 | 0.401  | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336437 | SNP       | C     | het | C/G    | 377 | 0.4058 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336438 | SNP       | C     | het | C/G    | 379 | 0.4037 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336441 | Insertion | G     | het | -/T    | 369 | 0.4255 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336442 | Insertion | A     | het | -/GTC  | 365 | 0.4219 | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336446 | SNP       | A     | het | A/T    | 375 | 0.424  | 100 |
| GNAQ_7   |            | hg19 | chr9  | 80336449 | Insertion | A     | het | -/T    | 344 | 0.4477 | 100 |
| GNAS1    |            | hg19 | chr20 | 57484494 | SNP       | C     | het | C/T    | 816 | 0.0196 | 23  |
| HNF1A_1  |            | hg19 | chr12 | 1.21E+08 | SNP       | C     | het | C/T    | 304 | 0.0263 | 24  |
| HNF1A_1  |            | hg19 | chr12 | 1.21E+08 | Insertion | C     | het | -/GG   | 279 | 0.0394 | 44  |
| HNF1A_1  |            | hg19 | chr12 | 1.21E+08 | Insertion | C     | het | -/G    | 279 | 0.0323 | 32  |
| HNF1A_1  |            | hg19 | chr12 | 1.21E+08 | SNP       | A     | het | A/G    | 188 | 0.0851 | 100 |
| HNF1A_1  |            | hg19 | chr12 | 1.21E+08 | SNP       | A     | het | A/G    | 173 | 0.0289 | 21  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | G     | het | G/T    | 11  | 0.0909 | 22  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | A     | het | A/G    | 11  | 0.0909 | 22  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | C     | het | C/T    | 13  | 0.0769 | 21  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | G     | het | G/C    | 13  | 0.0769 | 21  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | Deletion  | GC    | het | C/-    | 12  | 0.0833 | 22  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | C     | het | C/T    | 15  | 0.0667 | 20  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | T     | het | T/A    | 14  | 0.0714 | 20  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | C     | het | C/T    | 13  | 0.0769 | 21  |
| HNF1A_3  |            | hg19 | chr12 | 1.21E+08 | SNP       | C     | het | C/T    | 13  | 0.0769 | 21  |
| HRAS1    |            | hg19 | chr11 | 533972   | SNP       | C     | het | C/T    | 214 | 0.028  | 22  |
| IDH1_1_2 |            | hg19 | chr2  | 2.09E+08 | SNP       | C     | het | C/T    | 510 | 0.0275 | 36  |
| JAK2_1   |            | hg19 | chr9  | 5073799  | SNP       | C     | het | C/T    | 627 | 0.7257 | 100 |
| JAK3_1   |            | hg19 | chr19 | 17945699 | SNP       | C     | het | C/T    | 183 | 0.0328 | 26  |
| JAK3_1   |            | hg19 | chr19 | 17945705 | SNP       | A     | het | A/G    | 165 | 0.0364 | 28  |
| JAK3_2   | rs3212755  | hg19 | chr19 | 17948014 | SNP       | C     | het | C/T    | 136 | 0.0368 | 26  |
| JAK3_2   |            | hg19 | chr19 | 17948027 | SNP       | G     | het | G/T    | 194 | 0.0309 | 24  |
| JAK3_2   |            | hg19 | chr19 | 17948061 | SNP       | C     | het | C/T    | 238 | 0.0294 | 25  |
| JAK3_2   |            | hg19 | chr19 | 17948070 | SNP       | C     | het | C/T    | 246 | 0.0325 | 30  |
| KDR1     |            | hg19 | chr4  | 55946017 | SNP       | C     | het | C/T    | 615 | 0.0228 | 28  |
| KDR1     | rs4421048  | hg19 | chr4  | 55946081 | SNP       | A     | het | A/G    | 736 | 0.9973 | 100 |
| KDR1     |            | hg19 | chr4  | 55946240 | SNP       | G     | het | G/A    | 911 | 0.0263 | 50  |
| KDR11    |            | hg19 | chr4  | 55980388 | SNP       | C     | het | C/T    | 206 | 0.0437 | 42  |
| KDR11    |            | hg19 | chr4  | 55980393 | SNP       | C     | het | C/T    | 205 | 0.0293 | 23  |
| KDR3     |            | hg19 | chr4  | 55953818 | Deletion  | TTCC  | het | TCC/-  | 122 | 0.041  | 28  |
| KDR3     |            | hg19 | chr4  | 55953840 | SNP       | A     | het | A/G    | 176 | 0.0341 | 26  |
| KDR4     |            | hg19 | chr4  | 55955110 | SNP       | C     | het | C/A    | 456 | 0.0373 | 58  |
| KDR4     |            | hg19 | chr4  | 55955111 | SNP       | C     | het | C/A    | 459 | 0.0283 | 35  |
| KDR6     | rs56159068 | hg19 | chr4  | 55961057 | SNP       | C     | het | C/T    | 350 | 0.0229 | 20  |
| KDR6     |            | hg19 | chr4  | 55961096 | SNP       | C     | het | C/T    | 346 | 0.0231 | 20  |
| KDR6     |            | hg19 | chr4  | 55961098 | SNP       | C     | het | C/T    | 349 | 0.0287 | 30  |
| KDR8     | rs3214870  | hg19 | chr4  | 55962545 | Insertion | T     | het | -/G    | 473 | 0.5328 | 100 |

|             |            |      |       |          |          |    |     |     |     |        |     |
|-------------|------------|------|-------|----------|----------|----|-----|-----|-----|--------|-----|
| KDR8        |            | hg19 | chr4  | 55962591 | SNP      | C  | het | C/T | 512 | 0.0254 | 31  |
| KDR9        | rs1870377  | hg19 | chr4  | 55972974 | SNP      | T  | het | T/A | 836 | 0.5323 | 100 |
| KIT2        |            | hg19 | chr4  | 55592193 | SNP      | T  | het | T/G | 662 | 0.0257 | 37  |
| KIT2        |            | hg19 | chr4  | 55592199 | SNP      | T  | het | T/G | 623 | 0.0225 | 27  |
| KIT22       |            | hg19 | chr4  | 55595552 | SNP      | T  | het | T/G | 423 | 0.0331 | 44  |
| KIT23       |            | hg19 | chr4  | 55597515 | SNP      | C  | het | C/T | 667 | 0.0195 | 21  |
| KIT23       |            | hg19 | chr4  | 55597610 | SNP      | C  | het | C/T | 671 | 0.0209 | 24  |
| KIT24_28    |            | hg19 | chr4  | 55599317 | SNP      | A  | het | A/C | 254 | 0.0315 | 29  |
| KIT24_28    | rs62304360 | hg19 | chr4  | 55599429 | SNP      | C  | het | C/T | 492 | 0.0264 | 32  |
| KIT29       |            | hg19 | chr4  | 55602702 | SNP      | T  | het | T/G | 225 | 0.0444 | 46  |
| KIT29       |            | hg19 | chr4  | 55602703 | SNP      | T  | het | T/G | 222 | 0.0541 | 62  |
| KIT29       |            | hg19 | chr4  | 55602818 | SNP      | C  | het | C/T | 150 | 0.0333 | 24  |
| KIT3_19     |            | hg19 | chr4  | 55593575 | SNP      | C  | het | C/A | 345 | 0.0319 | 36  |
| KIT3_19     |            | hg19 | chr4  | 55593660 | SNP      | C  | het | C/T | 327 | 0.0245 | 22  |
| KIT3_19     |            | hg19 | chr4  | 55593663 | SNP      | C  | het | C/T | 323 | 0.0248 | 22  |
| KRAS1       |            | hg19 | chr12 | 25378594 | SNP      | C  | het | C/T | 230 | 0.0304 | 26  |
| KRAS1       |            | hg19 | chr12 | 25378630 | SNP      | C  | het | C/T | 264 | 0.0341 | 34  |
| KRAS1       |            | hg19 | chr12 | 25378665 | SNP      | C  | het | C/T | 263 | 0.0304 | 28  |
| KRAS2       |            | hg19 | chr12 | 25380396 | Deletion | CA | het | A/- | 157 | 0.0318 | 23  |
| KRAS7       |            | hg19 | chr12 | 25398267 | SNP      | C  | het | C/T | 172 | 0.0291 | 21  |
| KRAS7       |            | hg19 | chr12 | 25398354 | SNP      | T  | het | T/C | 218 | 0.0275 | 21  |
| KRAS7       |            | hg19 | chr12 | 25398357 | SNP      | C  | het | C/T | 222 | 0.0315 | 27  |
| MET1        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 337 | 0.0297 | 31  |
| MET1        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 337 | 0.0237 | 21  |
| MET1        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 335 | 0.0239 | 21  |
| MET2        |            | hg19 | chr7  | 1.16E+08 | SNP      | A  | het | A/T | 94  | 0.0426 | 25  |
| MET3        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 505 | 0.0277 | 36  |
| MET3        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 524 | 0.021  | 21  |
| MET4        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 103 | 0.0388 | 24  |
| MET4        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 105 | 0.0381 | 23  |
| MET4        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 114 | 0.0351 | 22  |
| MET4        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 113 | 0.0354 | 22  |
| MET6        |            | hg19 | chr7  | 1.16E+08 | SNP      | C  | het | C/T | 241 | 0.029  | 25  |
| MPL1_2      |            | hg19 | chr1  | 43815017 | SNP      | C  | het | C/T | 85  | 0.0353 | 20  |
| MPL1_2      |            | hg19 | chr1  | 43815034 | SNP      | C  | het | C/T | 86  | 0.0465 | 27  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | C  | het | C/T | 28  | 0.0714 | 25  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | C  | het | C/T | 34  | 0.0588 | 23  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | Deletion | AC | het | C/- | 37  | 0.0541 | 22  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | C  | het | C/T | 40  | 0.05   | 21  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | G  | het | G/A | 44  | 0.0455 | 20  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | A  | het | A/G | 44  | 0.0455 | 20  |
| NOTCH1_1    |            | hg19 | chr9  | 1.39E+08 | SNP      | C  | het | C/T | 42  | 0.0476 | 20  |
| NOTCH1_2    |            | hg19 | chr9  | 1.39E+08 | SNP      | C  | het | C/T | 99  | 0.0505 | 32  |
| NPM1        |            | hg19 | chr5  | 1.71E+08 | SNP      | C  | het | C/T | 118 | 0.0508 | 36  |
| NPM1        |            | hg19 | chr5  | 1.71E+08 | SNP      | C  | het | C/T | 217 | 0.0276 | 22  |
| NRAS1_7     |            | hg19 | chr1  | 1.15E+08 | SNP      | T  | het | T/A | 20  | 0.1    | 29  |
| PDGFRA1_4   |            | hg19 | chr4  | 55141037 | SNP      | C  | het | C/T | 404 | 0.0223 | 21  |
| PDGFRA1_4   | rs1873778  | hg19 | chr4  | 55141055 | SNP      | A  | het | A/G | 414 | 1      | 100 |
| PDGFRA1_4   |            | hg19 | chr4  | 55141119 | SNP      | C  | het | C/T | 417 | 0.0264 | 29  |
| PDGFRA6     |            | hg19 | chr4  | 55144571 | SNP      | T  | het | T/A | 80  | 0.05   | 29  |
| PDGFRA6     |            | hg19 | chr4  | 55144578 | SNP      | C  | het | C/T | 98  | 0.0408 | 25  |
| PDGFRA6     |            | hg19 | chr4  | 55144628 | SNP      | C  | het | C/T | 96  | 0.0625 | 42  |
| PIK3CA1     |            | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 207 | 0.0338 | 29  |
| PIK3CA1     |            | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 206 | 0.0388 | 35  |
| PIK3CA12    |            | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 386 | 0.0285 | 32  |
| PIK3CA12    |            | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 478 | 0.0209 | 20  |
| PIK3CA13_20 |            | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 396 | 0.0253 | 26  |
| PIK3CA13_20 | rs17849079 | hg19 | chr3  | 1.79E+08 | SNP      | C  | het | C/T | 393 | 0.0254 | 26  |
| PIK3CA3     |            | hg19 | chr3  | 1.79E+08 | SNP      | T  | het | T/G | 297 | 0.0303 | 30  |
| PTEN1       |            | hg19 | chr10 | 89624292 | SNP      | C  | het | C/T | 181 | 0.0331 | 26  |
| PTEN1       |            | hg19 | chr10 | 89624303 | SNP      | C  | het | C/T | 182 | 0.0275 | 20  |

|             |            |      |       |          |          |      |     |       |     |        |     |
|-------------|------------|------|-------|----------|----------|------|-----|-------|-----|--------|-----|
| PTEN1       |            | hg19 | chr10 | 89624338 | SNP      | T    | het | T/C   | 180 | 0.0278 | 20  |
| PTEN1       |            | hg19 | chr10 | 89624348 | SNP      | C    | het | C/T   | 180 | 0.05   | 47  |
| PTEN1       |            | hg19 | chr10 | 89624350 | SNP      | C    | het | C/T   | 178 | 0.0337 | 26  |
| PTEN13      |            | hg19 | chr10 | 89720795 | SNP      | C    | het | C/T   | 473 | 0.0254 | 29  |
| PTEN13      |            | hg19 | chr10 | 89720805 | SNP      | C    | het | C/T   | 481 | 0.0249 | 28  |
| PTEN13      | rs555895   | hg19 | chr10 | 89720907 | SNP      | T    | het | T/G   | 420 | 0.3286 | 100 |
| PTEN13      |            | hg19 | chr10 | 89720929 | SNP      | G    | het | G/A   | 417 | 0.0288 | 34  |
| PTEN3       |            | hg19 | chr10 | 89685327 | SNP      | T    | het | T/G   | 105 | 0.0381 | 23  |
| PTEN3       |            | hg19 | chr10 | 89685344 | SNP      | C    | het | C/T   | 151 | 0.0397 | 30  |
| PTEN4       |            | hg19 | chr10 | 89711923 | SNP      | C    | het | C/T   | 85  | 0.0588 | 36  |
| PTEN4       |            | hg19 | chr10 | 89711924 | SNP      | T    | het | T/A   | 84  | 0.0476 | 28  |
| PTEN7       |            | hg19 | chr10 | 89717550 | SNP      | C    | het | C/T   | 101 | 0.0594 | 41  |
| PTEN7       |            | hg19 | chr10 | 89717558 | SNP      | C    | het | C/T   | 102 | 0.0392 | 24  |
| PTEN7       |            | hg19 | chr10 | 89717629 | SNP      | C    | het | C/T   | 104 | 0.0385 | 24  |
| PTEN7       |            | hg19 | chr10 | 89717687 | SNP      | T    | het | T/C   | 94  | 0.0426 | 25  |
| PTEN7       |            | hg19 | chr10 | 89717710 | SNP      | G    | het | G/A   | 97  | 0.0412 | 25  |
| PTEN7       |            | hg19 | chr10 | 89717725 | Deletion | TG   | het | G/-   | 74  | 0.0405 | 22  |
| PTPN11_1    |            | hg19 | chr12 | 1.13E+08 | SNP      | C    | het | C/T   | 350 | 0.0314 | 35  |
| PTPN11_10   |            | hg19 | chr12 | 1.13E+08 | SNP      | C    | het | C/T   | 653 | 0.0199 | 21  |
| RB1_1       |            | hg19 | chr13 | 48919194 | SNP      | T    | het | T/G   | 190 | 0.0474 | 45  |
| RB1_1       |            | hg19 | chr13 | 48919195 | SNP      | T    | het | T/G   | 180 | 0.0944 | 100 |
| RB1_1       |            | hg19 | chr13 | 48919196 | SNP      | T    | het | T/G   | 194 | 0.0412 | 37  |
| RB1_2       |            | hg19 | chr13 | 48923148 | SNP      | T    | het | T/G   | 135 | 0.037  | 26  |
| RB1_2       |            | hg19 | chr13 | 48923227 | SNP      | C    | het | C/T   | 185 | 0.0541 | 54  |
| RB1_2       |            | hg19 | chr13 | 48923261 | SNP      | C    | het | C/T   | 182 | 0.0275 | 20  |
| RB1_3       |            | hg19 | chr13 | 48942752 | SNP      | C    | het | C/T   | 49  | 0.0816 | 38  |
| RB1_6       |            | hg19 | chr13 | 49027141 | SNP      | T    | het | T/G   | 57  | 0.1053 | 56  |
| RB1_6       |            | hg19 | chr13 | 49027147 | SNP      | C    | het | C/T   | 72  | 0.0556 | 31  |
| RB1_6       |            | hg19 | chr13 | 49027167 | SNP      | C    | het | C/T   | 86  | 0.0465 | 27  |
| RB1_7       |            | hg19 | chr13 | 49033946 | SNP      | A    | het | A/T   | 333 | 0.024  | 21  |
| RB1_8       |            | hg19 | chr13 | 49037846 | SNP      | T    | het | T/G   | 154 | 0.0519 | 45  |
| RB1_8       |            | hg19 | chr13 | 49037923 | SNP      | C    | het | C/T   | 201 | 0.0299 | 23  |
| RET1        |            | hg19 | chr10 | 43609110 | SNP      | C    | het | C/T   | 280 | 0.0286 | 26  |
| RET1        |            | hg19 | chr10 | 43609123 | SNP      | G    | het | G/T   | 323 | 0.0248 | 22  |
| RET10       | rs1800861  | hg19 | chr10 | 43613843 | SNP      | G    | het | G/T   | 46  | 0.5652 | 100 |
| RET10       |            | hg19 | chr10 | 43613867 | SNP      | C    | het | C/T   | 65  | 0.0462 | 24  |
| RET10       |            | hg19 | chr10 | 43613886 | SNP      | C    | het | C/T   | 74  | 0.0676 | 39  |
| RET10       |            | hg19 | chr10 | 43613960 | SNP      | C    | het | C/T   | 40  | 0.05   | 21  |
| RET11_12    |            | hg19 | chr10 | 43615608 | SNP      | C    | het | C/T   | 213 | 0.0376 | 34  |
| RET13       |            | hg19 | chr10 | 43617517 | SNP      | C    | het | C/T   | 415 | 0.0241 | 24  |
| SMAD4_1     |            | hg19 | chr18 | 48575195 | SNP      | C    | het | C/T   | 413 | 0.0242 | 24  |
| SMAD4_1     |            | hg19 | chr18 | 48575253 | SNP      | C    | het | C/T   | 415 | 0.0217 | 20  |
| SMAD4_15    |            | hg19 | chr18 | 48604742 | SNP      | C    | het | C/T   | 193 | 0.0311 | 24  |
| SMAD4_2     |            | hg19 | chr18 | 48581199 | SNP      | G    | het | G/T   | 341 | 0.0264 | 26  |
| SMAD4_3     |            | hg19 | chr18 | 48584569 | SNP      | C    | het | C/T   | 474 | 0.0253 | 29  |
| SMAD4_3     |            | hg19 | chr18 | 48584575 | SNP      | C    | het | C/T   | 500 | 0.026  | 32  |
| SMAD4_4     |            | hg19 | chr18 | 48586268 | SNP      | C    | het | C/A   | 88  | 0.0568 | 35  |
| SMAD4_4     |            | hg19 | chr18 | 48586276 | SNP      | C    | het | C/T   | 128 | 0.0313 | 20  |
| SMAD4_4     | rs78483519 | hg19 | chr18 | 48586311 | SNP      | C    | het | C/T   | 142 | 0.0352 | 25  |
| SMAD4_5     |            | hg19 | chr18 | 48591903 | SNP      | C    | het | C/T   | 264 | 0.0379 | 40  |
| SMARCB1_1   |            | hg19 | chr22 | 24134009 | SNP      | C    | het | C/T   | 175 | 0.0457 | 41  |
| SMARCB1_1   |            | hg19 | chr22 | 24134049 | SNP      | C    | het | C/T   | 178 | 0.0337 | 26  |
| SMARCB1_3   | rs62642539 | hg19 | chr22 | 24143308 | SNP      | C    | het | C/T   | 184 | 0.0326 | 25  |
| SMARCB1_3   | rs12160092 | hg19 | chr22 | 24143326 | SNP      | C    | het | C/T   | 182 | 0.0275 | 20  |
| SMARCB1_3   |            | hg19 | chr22 | 24143337 | SNP      | C    | het | C/T   | 182 | 0.0275 | 20  |
| SMARCB1_4   | rs5751738  | hg19 | chr22 | 24145675 | SNP      | G    | het | G/C   | 206 | 1      | 100 |
| SMARCB1_5_6 |            | hg19 | chr22 | 24176391 | SNP      | C    | het | C/T   | 131 | 0.0458 | 34  |
| SMO3        |            | hg19 | chr7  | 1.29E+08 | Deletion | TTCC | het | TCC/- | 40  | 0.075  | 31  |
| SMO3        |            | hg19 | chr7  | 1.29E+08 | SNP      | T    | het | T/C   | 40  | 0.05   | 21  |
| SMO3        |            | hg19 | chr7  | 1.29E+08 | SNP      | T    | het | T/C   | 53  | 0.0755 | 36  |

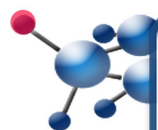
|            |            |      |       |          |          |    |     |     |     |        |     |
|------------|------------|------|-------|----------|----------|----|-----|-----|-----|--------|-----|
| SMO3       | rs2735842  | hg19 | chr7  | 1.29E+08 | SNP      | A  | het | A/G | 53  | 1      | 100 |
| SMO3       |            | hg19 | chr7  | 1.29E+08 | SNP      | C  | het | C/T | 56  | 0.0536 | 26  |
| SMO4       |            | hg19 | chr7  | 1.29E+08 | SNP      | C  | het | C/T | 113 | 0.0531 | 38  |
| SMO4       |            | hg19 | chr7  | 1.29E+08 | SNP      | C  | het | C/T | 114 | 0.0439 | 29  |
| STK11_1    |            | hg19 | chr19 | 1207109  | SNP      | T  | het | T/C | 65  | 0.0615 | 32  |
| STK11_1    |            | hg19 | chr19 | 1207126  | SNP      | C  | het | C/T | 80  | 0.0375 | 20  |
| STK11_12   |            | hg19 | chr19 | 1223098  | SNP      | C  | het | C/T | 225 | 0.0311 | 26  |
| STK11_12   | rs59912467 | hg19 | chr19 | 1223125  | SNP      | C  | het | C/T | 293 | 0.0239 | 20  |
| STK11_12   |            | hg19 | chr19 | 1223143  | SNP      | C  | het | C/T | 310 | 0.0258 | 23  |
| STK11_4    |            | hg19 | chr19 | 1220518  | Deletion | AG | het | G/- | 116 | 0.0345 | 22  |
| STK11_4    |            | hg19 | chr19 | 1220588  | SNP      | C  | het | C/T | 111 | 0.036  | 22  |
| STK11_4    |            | hg19 | chr19 | 1220590  | SNP      | C  | het | C/T | 117 | 0.0342 | 22  |
| STK11_8    |            | hg19 | chr19 | 1221320  | SNP      | G  | het | G/A | 222 | 0.036  | 33  |
| TP53_1     |            | hg19 | chr17 | 7574023  | SNP      | C  | het | C/T | 210 | 0.0286 | 22  |
| TP53_1     |            | hg19 | chr17 | 7574077  | SNP      | C  | het | C/T | 245 | 0.0327 | 30  |
| TP53_1     |            | hg19 | chr17 | 7574096  | SNP      | C  | het | C/T | 245 | 0.0327 | 30  |
| TP53_17    | rs11540652 | hg19 | chr17 | 7577538  | SNP      | C  | het | C/T | 139 | 0.0432 | 32  |
| TP53_3     |            | hg19 | chr17 | 7577061  | SNP      | C  | het | C/T | 113 | 0.0354 | 22  |
| TP53_3     |            | hg19 | chr17 | 7577137  | SNP      | C  | het | C/T | 125 | 0.048  | 35  |
| TP53_31_59 | rs1625895  | hg19 | chr17 | 7578115  | SNP      | T  | het | T/C | 127 | 1      | 100 |
| TP53_31_59 | rs17884607 | hg19 | chr17 | 7578129  | SNP      | C  | het | C/T | 141 | 0.0355 | 25  |
| TP53_31_59 |            | hg19 | chr17 | 7578245  | SNP      | G  | het | G/A | 130 | 0.0308 | 20  |
| TP53_31_59 |            | hg19 | chr17 | 7578531  | SNP      | C  | het | C/T | 302 | 0.0265 | 24  |
| TP53_60    |            | hg19 | chr17 | 7579414  | SNP      | C  | het | C/T | 85  | 0.0353 | 20  |
| TP53_60    | rs1042522  | hg19 | chr17 | 7579472  | SNP      | G  | het | G/C | 83  | 0.4096 | 100 |
| VHL3_5     |            | hg19 | chr3  | 10188254 | SNP      | A  | het | A/G | 226 | 0.0398 | 39  |
| VHL3_5     |            | hg19 | chr3  | 10188254 | SNP      | A  | het | A/T | 226 | 0.0265 | 21  |
| VHL3_5     |            | hg19 | chr3  | 10188294 | SNP      | C  | het | C/T | 318 | 0.0314 | 33  |
| VHL6_8     |            | hg19 | chr3  | 10191547 | SNP      | C  | het | C/T | 158 | 0.038  | 29  |

**Important Notes:**

1. All the sequencing data was obtained from the first 10 sections at 10 um thickness, there might be variations.
2. All the sequencing procedure was strictly followed Illumina's instruction, the data provided in the above tables are raw data from the vendor's system. It will be customers' discretion to determine which SNPs are valid.

**Components:**

1. 1 Block
2. 1 data sheet
3. Certificate of Analysis

**FOR IN VITRO RESEARCH USE ONLY****APPROVED BY:** **UK & Rest of World**

184 Milton Park, Abingdon  
OX14 4SE, Oxon, UK  
Tel: +44 (0) 1235 828 200  
Fax: +44 (0) 1235 820 482

**Switzerland**

Centro Nord-Sud 2E  
CH-6934 Bioggio-Lugano  
Tel: +41 (0) 91 604 55 22  
Fax: +41 (0) 91 605 17 85

**Deutschland**

Bockenheimer Landstr. 17/19  
60325 Frankfurt/Main  
Tel: +49 (0) 69 779099  
Fax: +49 (0) 69 13376880

**North America**

23591 El Toro Rd, Suite #180  
Lake Forest, CA 92630  
Tel: +1 800 987 0985  
Fax: +1 949 265 7703

**amsbio**

info@amsbio.com

www.amsbio.com  
AMS Biotechnology