Exons covered:

The following are the genes covered listed by exons and then codons; may include partially covered codons.

**GENE: Reference Sequence (NCBI)**
 Exon: Amino Acid Positions

**ABL1: NM\_005157.5**                Exon 4: L184 - K274
                Exon 5: E275 - G303
                Exon 6: G303 - R362
                Exon 7: R362 - A424
                Exon 8: A424 - C475
                Exon 9: C475 - E505

**ASXL1: NM\_015338.5**
                Exon 12: K362 - R573
                Exon 13: I574 - 1542\*

**BCOR: NM\_001123385.1**                Exon 2: M1 - R29R
                Exon 3: R29 - V55
                Exon 4: V56 - A885
                Exon 4: C925 - Q999
                Exon 5: M1000 - E1017
                Exon 6: R1018 - C1080
                Exon 7: C1080 - D1168
                Exon 8: 1168D 1283G
                Exon 9: G1283 - C1363
                Exon 10: V1392 - E1476
                Exon 11: E1477 - R1532
                Exon 12: R1532 - D1581
                Exon 13: D1581 - E1607
                Exon 14: E1607 - G1659
                Exon 15: G1659 - 1756\*

**BCORL1: NM\_021946.4**                Exon 1: 1M 29R
                Exon 2: 29R 59K
                Exon 3: 60V 428P
                Exon 3: 456S 595S
                Exon 3: 596V 798Q
                Exon 3: 822K 1147K
                Exon 4: 1148C 1203G
                Exon 5: 1203G 1230G
                Exon 6: 1230G 1360D
                Exon 7: 1360D 1435K
                Exon 8: 1436D 1491R
                Exon 9: 1491R 1540D
                Exon 10: 1540D 1566E
                Exon 11: 1566E 1618G
                Exon 12: 1618G 1712\*

**BRAF: NM\_004333.4**
                Exon 11: K439 - G478
                Exon 15: N581 - M620

**CALR: NM\_004343.3**                Exon 9: A352 – A413

**CBL: NM\_005188.3**
                Exon 1: S8 - K61
                Exon 2: P81 - T129
                Exon 3: R148 - K197
                Exon 5: P250 - S290
                Exon 8: E366 - Q409
                Exon 9: E410 - K477
                Exon 10: V478 - K521
                Exon 12: S648 - R679
                Exon 13: R679 -R718
                Exon 16: G838 - E894

**CBLC: NM\_012116.3**
                Exon 9: V429 - V454

**CEBPA: NM\_004364.4**                Exon 1: M1 - G117
                Exon 1: E163 - 359\*

**CSF3R: NM\_000760.3**
                Exon 14: S575 - E622
                Exon 15: E622 - N653
                Exon 16: N653 - E680

**DDX41: NM\_016222.3**
                Exon 1: M1 - K9
                Exon 3: L47 - A100
                Exon 5: A125 - S145
                Exon 6: S145 – A191

 Exon 8: I215 - S266
                Exon 10: H312 - K366
                Exon 11: G367 - Q410
                Exon 14: D467 - V517

 Exon 15: V517 – D541

**DNMT3A: NM\_022552.4**                Exon 2: M1 - K24
                Exon 3: D25 - P59
                Exon 4: V60 - G150
                Exon 5: G150 - E164
                Exon 6: G165 - E213
                Exon 7: A214 - E285
                Exon 8: D286 - V338
                Exon 9: V339 - Q374
                Exon 10: V375 - E427

 Exon 12: E477 – D492
                Exon 11: E427 - E477
                Exon 13: D492 - K518
                Exon 14: N519 - R556
                Exon 15: R556 - F617
                Exon 16: D618 - G646
                Exon 17: G646 - H694
                Exon 18: I695 - E725
                Exon 19: E725 - E774
                Exon 20: S775 - R803
                Exon 21: R803 - K826
                Exon 22: F827 - R866
                Exon 23: R866 - 913\*

**ETV6: NM\_001987.4**                Exon 1: M1 - K11
                Exon 2: Q12 - R55
                Exon 3: R55 - G110
                Exon 4: G110 - D155
                Exon 5: D155 - D337
                Exon 6: D337 - K384
                Exon 7: N385 - R418
                Exon 8: R418 - 453\*

**EZH2: NM\_001203247.1**                Exon 2: M1 - K39
                Exon 4: C83 - M121
                Exon 5: V122 - E162
                Exon 6: E162 - D209
                Exon 7: D209 - P232
                Exon 8: K243 - P298
                Exon 9: P298 - L328
                Exon 10: E329 - E409
                Exon 11:E 409 - Q465
                Exon 12: V466 - R497
                Exon 13: R497 - D511
                Exon 14: D511 - C553
                Exon 15: C553 - K612
                Exon 16: H613 - E644
                Exon 17: I645 - D672
                Exon 18: D672 - V699
                Exon 19: V699 - R727
                Exon 20: R727 - 747\*

**FLT3: NM\_004119.2**                Exon 14: Q569 - G613

 Exon 15: G613 – E648
                Exon 20: C807 - N847

**GATA1: NM\_002049.3**                Exon 2: M1 - V74

**GATA2: NM\_032638.4**                Exon 2: M1 - A77
                Exon 3: A277 - E291
                Exon 4: E291 - L339
                Exon 5: S340 - N381
                Exon 6: V382 - 481\*

**IDH1: NM\_005896.3**                Exon 4: S41 - Q138

**IDH2: NM\_002168.3**
                Exon 4: E125 - Q178
                Exon 6: S227 - K272

**IKZF1: NM\_006060.5**
                Exon 2: M1 - G14
                Exon 3: G14 - A54
                Exon 4: A54 - G141
                Exon 5: G141 - V197
                Exon 6: V197 - V239
                Exon 7: V239 - G284
                Exon 8: G284 - 520\*

**JAK2: NM\_004972.3**                Exon 12: D505 - F547
                Exon 13: N548 - E592
                Exon 14: S593 - N622
                Exon 15: K630 - L664

**KDM6A: NM\_021140.3**
                Exon 1: M1 - S54
                Exon 2: S54 - K75
                Exon 3: A76 - A112
                Exon 4: A112 - K128
                Exon 5: N129 - W148
                Exon 6: W148 - K188
                Exon 7: H189 - I207
                Exon 8: I207 - Q218
                Exon 9: R219 - G250
                Exon 10: G250 - R292
                Exon 11: R292 - G325
                Exon 12: G325 - Q398
                Exon 13: A399 - Q443
                Exon 14: N444 - Q475
                Exon 15: H476 - Q509
                Exon 16: M510 - Q641
                Exon 17: G642 - R901
                Exon 18: R901 - Y944
                Exon 19: L945 – D980
                Exon 20: D980 - R1048
                Exon 21: E1049 - N1070
                Exon 23: K1095 - G1145
                Exon 24: G1145 - K1183
                Exon 25: K1183 - A1246
                Exon 26: A1246 - K1293
                Exon 27: K1293 - E1335
                Exon 28: V1336 - L1392
                Exon 29: A1393 - 1402\*

**KIT: NM\_000222.2**
                Exon 2: G23 - D113
                Exon 8: T411 - R449
                Exon 9: R449 - E514
                Exon 10: E514 - Q549

 Exon 11: K550 – G592
                Exon 13: P627 - G664
                Exon 14: G664 - C714
                Exon 15: C714 - G745
                Exon 17: C788 - N828
                Exon 18: A829 - G866

**KMT2A: NM\_005933.3**                Exon 1: G102 - E144
                Exon 2: D145 - V168
                Exon 3: G382 - K439
                Exon 4: Q1054 - S1106
                Exon 5: V1135 - K1190
                Exon 6: K1190 - A1212
                Exon 7: S1232 - K1293
                Exon 8: G1338 - K1362
                Exon 9: E1363 - K1406
                Exon 10: E1407 - E1444
                Exon 11: F1445 - K1493
                Exon 27: Q2427 - I2487
                Exon 31: D3688 - G3713
                Exon 35: R3835 - K3878

**KRAS: NM\_033360.3**
                Exon 2: M1 - E37
                Exon 3: D38 - R97
                Exon 4: R97 - Q150

**MPL: NM\_005373.2**                Exon 10: A490 - R522

**MYD88: NM\_002468.4**                Exon 5: G259 - 310\*

**NF1: NM\_001042492.2**                Exon 1: M1 - Q20
                Exon 2: L21 - M68
                Exon 3: R69 - G96
                Exon 4: Q112 - R160
                Exon 6: E196 - K218
                Exon 12: S421 - P464
                Exon 30: R1325 - Q1370
                Exon 37: G1620 - Y1680
                Exon 38: Q1822 - R1870
                Exon 39: G1897 - S1938
                Exon 41: I2003 - K2049
                Exon 45: R2235 - K2273
                Exon 49: G2397 - A2441
                Exon 52: G2539 - E2580
                Exon 58: G2793 - 2840\*

**NOTCH1: NM\_017617.4**                Exon 26: N1529 - G1673
                Exon 27: G1673 - S1723
                Exon 34: E2061 - 2556\*

**NPM1: NM\_002520.6**
                Exon 11: A283 - 295\*

**NRAS: NM\_002524.4**
                Exon 2: M1 - E37
                Exon 3: D38 - R97
                Exon 4: R97 - Q150

**PDGFRA: NM\_006206.5**
                Exon 12: K552 - G596
                Exon 14: P631 - G668
                Exon 15: G668 - S719
                Exon 18: C814 - S854

**PHF6: NM\_032458.2**                Exon 2: M1 - M46
                Exon 3: L47 - L80
                Exon 4: M81 - M125
                Exon 5: M125 - A140
                Exon 6: A140 - Y195
                Exon 7: R196 - M243
                Exon 8: L244 - M278
                Exon 9: K279 - K323
                Exon 10: K323 - 366\*

**PPM1D: NM\_003620.3**                Exon 6: S421 - 606\*

**PTEN: NM\_000314.6**                Exon 5: V85 - K164
                Exon 7: N212 - K267

**PTPN11: NM\_001330437.1**                Exon 3: R46 - R111
                Exon 13: G487 - Q537

**RHOA: NM\_001313941.1**                Exon 3: M1 - Q52

**RUNX1: NM\_001754.4**
                Exon 2: M1 - E20
                Exon 3: E20 - D33
                Exon 4: D33 - K117
                Exon 5: V118 - G170
                Exon 6: G170 - R205
                Exon 7: R205 - D269
                Exon 8: D269 - T323
                Exon 9: T323 - 481\*

**SETBP1: NM\_015559.2**                Exon 4: A181 - G1334

**SF3B1: NM\_012433.3**                Exon 13: I574 - K602

 Exon 14: A603 – G693
                Exon 15: G693 - I735
                Exon 15: R736 - K741

 Exon 16: G742 – K790

**SRSF2: NM\_003016.4**
                Exon 1: M1 - S121

**STAG1: NM\_005862.2**                Exon 10: R301 - R342
                Exon 11: Q343 - K375
                Exon 12: D376 - H402
                Exon 16: A516 - R550
                Exon 22: I733 - K759
                Exon 29: V1022 - D1091
                Exon 30: D1091 - N1149

**STAG2: NM\_006603.4**
                Exon 2: M1 - Q15
                Exon 3: Q15 - K41
                Exon 4: T 42 - Q96
                Exon 5: S97 - G129
                Exon 6: G129 - E154
                Exon 7: D155 - A223
                Exon 8: A223 - E273
                Exon 9: L274 - R298
                Exon 10: R298 - K339
                Exon 11: Q340 - K372
                Exon 13: Q399 - K435
                Exon 14: K435 - E472
                Exon 15: L473 - A512
                Exon 16: A512 - R546
                Exon 17: V547 - K577

 Exon 18: Y578 – K607
                Exon 19: H608 - E675
                Exon 20: G676 - N699
                Exon 21: N699 - Q728

 Exon 22: I729 – K755
                Exon 23: E756 - Q786
                Exon 24: A787 - D845
                Exon 25: D845 - K891
                Exon 26: Y892 - Q925
                Exon 27: L926 - K975
                Exon 28: K975 - V1018
                Exon 29: V1018 - T1093
                Exon 30: T1093 - N1156
                Exon 31: N1156 - L1198
                Exon 32: P1199 - S1224
                Exon 33: V1225 - 1232\*

**STAT3: NM\_139276.2**                Exon 13: G380 - L411

 Exon 14: T412 – D427
                Exon 15: A428 - E455
                Exon 16: T456 - K488
                Exon 17: N489 - G534
                Exon 18: G534 - K551
                Exon 19: E552 - G583
                Exon 20: G583 - G630
                Exon 21: G630 - S701

**TET2: NM\_001127208.2**
                Exon 3: M1 - E137
                Exon 4: E137 - R167
                Exon 5: R167 - W198
                Exon 6: V199 - W268
                Exon 7: E268 - E318
                Exon 8: 1319E 1348Q
                Exon 9: 1349I 1394L
                Exon 10: 1395V 1513E
                Exon 11: 1513E 2003\*
**TP53: NM\_000546.5**                Exon 2: 1M 25L

 Exon 3: 25L – 32L

 Exon 4: 33S – 125T
                Exon 5: 126Y 187G

 Exon 6: 187G – 224E
                Exon 7: 225V 261S
                Exon 8: 261S 307A

 Exon 9: 307A – 331Q
                Exon 10: 332I 367S
                Exon 11: 367S 394\*
**U2AF1: NM\_006758.2**
                Exon 1: 1M 15K
                Exon 2: 15K 44Q
                Exon 3: 45T 67C
                Exon 5: 84E 116K
                Exon 6: 117F 161G
                Exon 8: 192K 241\*
**WT1: NM\_001198551.1**                Exon 2: G4-G45G
 Exon 3: 45G 79S
                Exon 4: 79S 105G
                Exon 5: 105G 122N
                Exon 6: 122N 154Q
                Exon 7: 155D 205G
                Exon 8: 205G 235G
                Exon 9: 235G 263G
                Exon 10: 263G 303\*
**ZRSR2: NM\_005089.3**                Exon 1: 1M 14S
                Exon 2: 14S 41G
                Exon 3: 41G 68R
                Exon 4: 68R 104E
                Exon 5: 105R 133E
                Exon 6: 134E 146E
                Exon 7: 147L 186R
                Exon 8: 186R 257K
                Exon 9: 258V 276S
                Exon 10: 276S 313G
                Exon 11: 313G 483\*