

**OncoAlly™  
Solid Tumor Analysis  
Addendum**

Patient Name

Date of Birth

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sample here

**OncoAlly™ - Addendum**

**OncoAlly Solid Tumor analysis list of genes**

*ABL1, ABL2, ABRAXAS1, ACVR1, AJUBA, AKT1, AKT2, AKT3, ALK, AMER1, APC, AR, ARAF, ARID1A, ARID2, ASXL1, ATM, ATR, ATRX, AURKA, AURKB, AURKC, AXIN2, AXL, B2M, BAP1, BARD1, BCL10, BCL11A, BCL2, BCL2A1, BCL2L1, BCL2L11, BCL3, BCL6, BCOR, BCORL1, BIRC2, BIRC3, BLM, BMPR1A, BRAF, BRCA1, BRCA2, BRD1, BRD2, BRD4, BRIP1, BTG1, BTG2, BTK, CAD, CALR, CARD11, CBL, CCDC6, CDC73, CCND1, CCND2, CCND3, CCNE1, CD274, CDH1, CDK12, CDK2, CDK4, CDK6, CDK7, CDK8, CDK9, CDKN1A, CDKN1B, CDKN2A, CDKN2B, CDKN2C, CEBPA, CHD2, CHEK1, CHEK2, CIC, CIITA, CREBBP, CRKL, CSF1R, CSF3R, CTCF, CTLA4, CTNNA1, CTNNA1B, CUL3, CXCR4, CYLD, DAXX, DDIT3, DDR1, DDR2, DDX41, DICER1, DNMT3A, DRD2, EBF1, ECT2, ECT2L, EED, EGFR, EIF1AX, ELF3, ELOC (TCEB1), EML4, EMSY, EP300, EPCAM, EPHA2, ERBB2, ERBB3, ERBB4, ERCC2, ERCC3, ERCC4, ERCC5, ERG, ERRF1, ESR1, ETV1, ETV4, ETV5, ETV6, EWSR1, EZH2, FANCA, FANCC, FANCD2, FAS, FAT1, FBXO11, FBXW7, FGF10, FGF19, FGF23, FGF3, FGF4, FGF6, FGFR1, FGFR2, FGFR3, FGFR4, FH, FLCN, FLT1, FLT3, FLT4, FOLR1, FOXA1, FOXA2, FOXL2, FOXO1, FOXP1, FRS2, FUBP1, GALNT12, GATA1, GATA2, GATA3, GATA4, GATA6, GLI1, GNA11, GNA13, GNAQ, GNAS, GRIN2A, GSK3B, H3F3A, H3F3B, HDAC1, HDAC2, HDAC3, HDAC6, HIF1A, HIST1H3B, HIST1H3C, HNF1A, HOXB13, HRAS, ID3, IDH1, IDH2, IGF1R, IGF2, IKBKE, IKZF1, IKZF2, IKZF3, IL7R, INPP4B, INSR, IRF1, IRF4, IRS2, ITK, JAK1, JAK2, JAK3, JARID2, JUN, KDM5A, KDM5C, KDM6A, KDR, KEAP1, KIT, KLF5, KLHL6, KMT2A, KMT2B, KMT2C, KMT2D, KRAS, LCK, LMO1, LYN, LZTR1, MALT1, MAML2, MAP2K1, MAP2K2, MAP2K4, MAP3K1, MAP3K14, MAP3K7, MAPK1, MAPK3, MAPK4, MAPK7, MAX, MCL1, MDM2, MDM4, MECOM, MED12, MEF2B, MEF2C, MEN1, MERTK, MET, MGMT, MITF, MLH1, MSH2, MSH3, MSH6, MLLT3, MPL, MRE11, MST1R, MTAP, MTOR, MUTYH, MYC, MYCL, MYCN, MYD88, NBN, NCOA1, NCOA2, NCOR1, NF1, NF2, NFE2L2, NFKBIA, NOTCH1, NOTCH2, NOTCH3, NRAS, NSD1, NT5C2, NTHL1, NTRK1, NTRK2, NTRK3, NUP214, NUP98, P2RY8, PALB2, PAX3, PAX7, PBRM1, PDCD1, PDGFRA, PDGFRB, PHF1, PHF6, PHOX2B, PIK3CA, PIK3CB, PIK3CD, PIK3CG, PIK3R1, PIK3R2, PIM1, PLAG1, PLCG1, PLCG2, PLK1, PMS2, POLD1, POLE, POT1, PPARG, PPP2R1A, PRKAR1A, PRKG1, PRKDC, PTCH1, PTEN, PTK2, PTK6, PTPN6, PTPN11, PTPRD, PTPRO, PTPRT, RAC1, RAD21, RAD50, RAD51, RAD51B, RAD51C, RAD51D, RAD54L, RAF1, RARA, RASGEF1A, RB1, RBM10, RECQL4, REL, RELN, RET, RHOA, RICTOR, RIT1, RNF43, ROS1, RPL5, RPS6KB2, RPTOR, RUNX1, RUNX1T1, SDHA, SDHAF2, SDHB, SDHC, SDHD, SEC23B, SETBP1, SETD2, SF3B1, SGK1, SH2B3, SH2D1A, SIK1, SLX4, SIN3A, SLAMF7, SMARCB1, SMAD2, SMAD3, SMAD4, SMARCA1, SMARCA4, SMC3, SMO, SOX2, SOX9, SPEN, SPOP, SPRED1, SRC, SRSF2, STAG2, STAT3, STAT5A, STAT5B, STAT6, STK11, SUFU, SUZ12, SYK, TAF1, TBL1XR1, TCF3, TEK, TENT5C, TERT, TET1, TET2, TGFB2, TLR4, TMEM127, TMEM30A, TMPRSS2, TNFAIP3, TNFRSF14, TNFRSF17, TNFSF11, TOP1, TP53, TP53BP1, TP63, TRAF3, TRAF7, TSC1, TSC2, TSHR, TYRO3, U2AF1, U2AF2, USP9X, VEZF1, VHL, WEE1, WRN, WT1, XBP1, XPO1, ZNF217, ZNF423, ZRSR2, ZNF521, ZNF703, TERT promoter region, BRCA1 intronic region, BRCA2 intronic regions, MET introns 13 and 14*

**Onco-pharmacogenomics list of genes**

*CYP2C8, CYP2D6, CYP3A5, DPYD, GSTP1, NUDT15, SLCO1B1, TPMT, and UGT1A1*

**Onco-pharmacogenomics list of star alleles:**

CYP2C8	*3
CYP2D6	*4, *5, *10, *17, *29, *41
CYP3A5	*1, *3
DPYD	*2A, HapB3, D949V
GSTP1	*B
NUDT15	*2, *3, *9
SLCO1B1	*5, *14, *15, *37
TPMT	*2, *3A, *3B, *3C
UGT1A1	*6, *28

**OncoAlly™ Cancer Predisposition list of genes**

*APC, ATM, AXIN2, BAP1, BARD1, BLM, BMPR1A, BRCA1, BRCA2, BRIP1, CDC73, CDH1, CDK4, CDKN1B, CDKN2A, CEBPA, CHEK2, CTNNA1, CTNNA1B, DDX41, DICER1, EPCAM, FH, FLCN, GATA2, GREM1, HOXB13, HRAS, KIT, MAX, MBD4, MEN1, MET, MITF, MLH1, MSH2, MSH3, MSH6, MUTYH, NBN, NF1, NF2, NTHL1, PALB2, PAX5, PDGFRA, PHOX2B, PMS2, POLD1, POLE, POT1, PRKAR1A, PTCH1, PTEN, PTPN11, RAD51C, RAD51D, RB1, RECQL, RECQL4, RET, RNASEL, RPL5, RUNX1, SAMD9, SAMD9L, SDHA, SDHAF2, SDHB, SDHC, SDHD, SMAD4, SMARCA4, SMARCB1, SMARCE1, SOS1, SRP72, STK11, SUFU, TERC, TERT, TMEM127, TP53, TSC1, TSC2, VHL, WT1, WRN*

**Limitations for the above genes**

The following genes are not fully covered: *SOS1, PTCH1, STK11, CEBPA*. Therefore there may be variants in certain regions of these genes that are not identified with this test. The following genes have regions that are not unique: *SDHA, PMS2*. Therefore there may be variants in these genes that cannot be assigned to the correct location and limit the interpretation.

**Genomic Unity® Pharmacogenomics Analysis list of genes**

*CYP2B6, CYP2C9, CYP2C19, CYP2D6, CYP3A5, CYP4F2, DPYD, NAT2, NUDT15, TPMT, UGT1A1, VKORC1, SLCO1B1*

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**Genomic Unity® Pharmacogenomics Analysis list of star alleles**

CYP2B6	*1 (reference), *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29 (CYP2B7-CYP2B6 hybrid), *30 (CYP2B6-CYP2B7 hybrid), *31, *32, *33, *34, *35, *36, *37, *38, and copy number variations.
CYP2C9	*1 (reference), *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *35, *36, *37, *38, *39, *40, *41, *42, *43, *44, *45, *46, *47, *48, *49, *50, *51, *52, *53, *54, *55, *56, *57, *58, *59, *60, *61, *62, *63, *64, *65, *66, *67, *68, *69, *70, *71
CYP2C19	*1, *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *22, *23, *24, *25, *26, *28, *29, *30, *31, *32, *33, *34, *35, *36 (Whole gene deletion), *37 (Partial gene deletion), *38 (reference), *39
CYP2D6	*1 (reference), *2, *3, *4, *5 (Whole gene deletion), *6, *7, *8, *9, *10, *11, *12, *13 (CYP2D7-CYP2D6 hybrid), *14, *15, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *28, *29, *30, *31, *33, *34, *35, *36 (CYP2D6-CYP2D7 hybrid), *37, *38, *39, *40, *41, *42, *43, *44, *45, *46, *47, *48, *49, *50, *51, *52, *53, *54, *55, *56, *57, *58, *59, *60, *61 (CYP2D6-CYP2D7 hybrid), *62, *63 (CYP2D6-CYP2D7 hybrid), *64, *65, *68 (CYP2D6-CYP2D7 hybrid), *69, *70, *71, *72, *73, *74, *75, *81, *82, *83, *84, *85, *86, *87, *88, *89, *90, *91, *92, *93, *94, *95, *96, *97, *98, *99, *100, *101, *102, *103, *104, *105, *106, *107, *108, *109, *110, *111, *112, *113, *114, *115, *116, *117, *118, *119, *120, *121, *123, *124, *125, *126, *128, *129, *130, *132, *133, *134, *135, *136, *137, *138, *140, *141, *142, *143, *144, *145, and copy number variations.
CYP3A5	*1 (reference), *3, *6, *7, *8, *9
CYP4F2	*1 (reference), *2, *3 (V433M)
DPYD	Reference, c.1905+1G>A (*2A), c.1898delC (*3), c.1601G>A (*4), c.1627A>G (*5), c.2194G>A (*6), c.295_298delTCAT (*7), c.703C>T (*8), c.85T>C (*9A), c.2657G>A (*9B), c.2983G>T (*10), c.1003G>T (*11), c.1156G>T (*12), c.1679T>G (*13), c.1129-5923C>G, c.1236G>A (HapB3), c.2846A>T, c.557A>G, c.62G>A, c.496A>G, c.1218G>A, c.1896T>C, c.46C>G, c.61C>T, c.313G>A, c.343A>G, c.451A>G, c.498G>A, c.601A>C, c.632A>G, c.775A>G, c.868A>G, c.929T>C, c.934C>T, c.967G>A, c.1024G>A, c.1057C>T, c.1108A>G, c.1181G>T, c.1180C>T, c.1260T>A, c.1278G>T, c.1294G>A, c.1314T>G, c.1349C>T, c.1358C>G, c.1403C>A, c.1475C>T, c.1484A>G, c.1519G>A, c.1543G>A, c.1577C>G, c.1615G>A, c.1682G>T, c.1775G>A, c.1774C>T, c.1777G>A, c.1796T>C, c.1905C>G, c.1906A>C, c.1990G>T, c.2021G>A, c.2161G>A, c.2186C>T, c.2195T>G, c.2279C>T, c.2303C>A, c.2336C>A, c.2482G>A, c.2582A>G, c.2623A>C, c.2639G>T, c.2656C>T, c.2872A>G, c.2915A>G, c.2921A>T, c.2933A>G, c.2978T>G, c.2977C>T, c.3049G>A, c.3061G>C, c.3067C>A, c.525G>A, c.1371C>T
NAT2	*4 (reference), *5, *6, *7, *10, *11, *12, *13, *14, *17, *18, *19, *20, *21, *22, *23, *24, *25
NUDT15	*1 (reference), *2, *3, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20
TPMT	*1 (reference), *2, *3A, *3B, *3C, *4, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14, *15, *16, *17, *18, *19, *20, *21, *22, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *35, *36, *37, *38, *39, *40, *41, *42, *43, *44
UGT1A1	*1 (reference), *6, *27, *28, *36, *37, *80, *80+*28, *80+*37
VKORC1	Reference, rs9923231 (-1639G>A)
SLCO1B1	*1 (*1A, reference), *37 (*1B), *2, *3, *4, *5 (521C), *6, *7, *8, *9, *10, *11, *12, *13, *14, *15 (521C), *16, *19, *20, *23, *24, *25, *26, *27, *28, *29, *30, *31, *32, *33, *34, *36

**Limitations for the above genes**

Orthogonal confirmation may be required for the *CYP2D6* gene if a tandem duplication is identified involving \*36 and \*10 alleles, and/or to verify phasing of variants in complex alleles (eg, \*7 = \*5+\*6 in *CYP2D6*).