NGS PANELS IM ANGEBOT

- **Oncomine™ Comprehensive Assay Plus (DNA 391 Gene, RNA 51 Fusionsgene)**
- **Oncomine™ Comprehensive Assay v3 (DNA 135 Gene, RNA 51 Fusionsgene)**
- **Oncomine™ Focus Assay (DNA 35 Gene, RNA 23 Fusionsgene)**
- **Oncomine™ BRCA Research Assay**
- **TMB (Tumormutationslast pro Megabase, 409 Gene)**

PANELS IM DETAIL (GENE UND EXONE)

Oncomine™ Comprehensive Assay Plus Panel

DNA gain of function content (CNV gain only; n=19): *ABCB1, CTNND2, DDR1, EMSY, FGF1, FGF23, FGF3, FGF4, FGF9, FYN, GLI3, IGF1R, MCL1, MDM2, MYCL, RPS6KB1, RPTOR, YAP1, YES1*
DNA gain of function content (CNV gain and hotspot genes; n=108): *ABL1, ABL2, AKT1, AKT2, AKT3, ALK, AR, ARAF, AURKA, AURKC, AXL, BCL2, BCL2L12, BCL6, BRAF, CARD11, CBL, CCND1, CCND2, CCND3, CCNE1, CDK4, CDK6, CHD4, DDR2, EGFR, EIF1AX, ERBB2, ERBB3, ERBB4, ESR1, EZH2, FAM135B, FGFR1, FGFR2, FGFR3, FGFR4, FLT3, FLT4, FOXA1, GATA2, GNAS, H3F3A, H3F3B, IDH2, IKBKB, IL7R, KDR, KIT, KLF5, KRAS, MAGOH, MAP2K1, MAPK1, MAX, MDM4, MECOM, MEF2B, MET, MITF, MPL, MTOR, MYC, MYCN, MYD88, NFE2L2, NRAS, NTRK1, NTRK3, PCBP1, PDGFRA, PDGFRB, PIK3C2B, PIK3CA, PIK3CB, PIK3R2, PIM1, PLCG1, PPP2R1A, PPP6C, PRKACA, PTPN11, PXDNL, RAC1, RAF1, RARA, RET, RHEB, RICTOR, RIT1, ROS1, SETBP1, SF3B1, SLCO1B3, SMC1A, SMO, SPOP, SRC, STAT3, STAT6, TERT, TOP1, TPMT, U2AF1, USP8, XPO1, ZNF217, ZNF429*
DNA gain of function content (hotspots only; n=57): *ACVR1, ATP1A1, BCR, BMP5, BTK, CACNA1D, CD79B, CSF1R, CTNNB1, CUL1, CYSLTR2, DGCR8, DROSHA, E2F1, EPAS1, FGF7, FOXL2, FOXO1, GLI1, GNA11, GNAQ, HIF1A, HIST1H2BD, HIST1H3B, HRAS, IDH1, IL6ST, IRF4, IRS4, KLF4, KNSTRN, MAP2K2, MED12, MYOD1, NSD2, NT5C2, NTRK2, NUP93, PAX5, PIK3CD, PIK3CG, RTPRD, RGS7, RHOA, RPL10, SIX1, SIX2, SNCAIP, SOS1, SOX2, SRSF2, STAT5B, TAF1, TGFBR1, TRRAP, TSHR, WAS*
DNA loss of function content (CNV loss and complete DNA sequence; n=206): *ABRAXAS1, ACVR1B, ACVR2A, ADAMTS12, ADAMTS2, AMER1, APC, ARHGAP35, ARID1A, ARID1B, ARID2, ARID5B, ASXL1, ASXL2, ATM, ATR, ATRX, AXIN1, AXIN2, B2M, BAP1, BARD1, BCOR, BLM, BMPR2, BRCA1, BRCA2, BRIP1, CASP6, CBFB, CD274, CD276, CDC73, CDH1, CDH10, CDK12, CDKN1A, CDKN1B, CDKN2A, CDKN2B, CDKN2C, CHEK1, CHEK2, CIC, CREBBP, CSMD3, CTCF, CTL4A, CUL3, CUL4A, CUL4B, CYLD, CYP2C9, DAXX, DDX3X, DICER1, DNMT3A, DOCK3, DPYD, DSC1, DSC3, ELF3, ENO1, EP300, EPCAM, EPHA2, ERAP1, ERAP2, ERCC2, ERCC4, ERRFI1, ETV6, FANCA, FANCC, FANCD2, FANCE, FANCF, FANCG, FANCI, FANCL, FANCM, FAT1, FBXW7, FUBP1, GATA3, GNA13, GPS2, HDAC2, HDAC9, HLA-A, HLA-B, HNF1A, INPP4B, JAK1, JAK2, JAK3, KDM5C, KDM6A, KEAP1, KMT2A, KMT2B, KMT2C, KMT2D, LARP4B, LATS1, LATS2, MAP2K4, MAP2K7, MAP3K1, MAP3K4, MAPKB8, MEN1, MAG, MLH1, MLH3, MRE11, MSH2, MSH3, MSH6, MTAP, MUTYH, NBN, NCOR1, NF1, NF2, NOTCH1, NOTCH2, NOTCH3, NOTCH4, PALB2, PARP1, PARP2, PARP3, PARP4, PBRM1, PDCD1, PDCD1LG2, PDIA3, PGD, PHF6, PIK3R1, PMS1, PMS2, POLD1, POLE, POT1, PPM1D, PPP2R2A, PRDM1, PRDM9, PRKAR1A, PTCH1, PTEN, PTPRT, RAD50, RAD51, RAD51B, RAD51C, RAD51D, RAD52, RAD54L, RASA1, RASA2, RB1, RBM10, RECQL4, RNASEH2A, RNASEH2B, RNF43, RPA1, RUNX1, SDHA, SDHB, SDHD, SETD2, SLX4, SMAD2, SMAD4, SNARCA4, SMARCB1, SOX9, SPEN, STAG2, STK11, SUFU, TAP1, TAP2, TBX3, TCF7L2, TET2, TGFBR2, TNFAIP3, TNFRSF14, TP53, TP63, TPP2, TSC1, TSC2, USP9X, VHL, WT1, XRCC2, XRCC3, ZFHX3, ZMYM3 ZRSR2*
DNA loss of function content (complete DNA sequence only; n=21): *CALR, CIITA, CYP2D6, ERCC5, FAS, ID3, KLHL13, MTUS2, PSMB10, PSMB8, PSMB9, RNASEH2C, RPL22, RPL5, RUNX1T1, SDHC, SOCS1, STAT1, TMEM132D, UGT1A1, ZBTB20*
TMB only genes (n=86): *A1CF, ACSM2B, ADAM18, ANO4, ARMC4, BRINP3, C6, C8A, C8B, CANX, CASR, CD163, CNTN6, CNTNAP4, CNTNAP5, COL11A1, DCAF4L2, DCDC1, GALNT17, GPR158, GRID2, HCN1, HLA-C, KCND2, KCNH7, KEL, KIR3DL1, KRTAP2-1, KRTAP6-2, LRRC7, MARCO, NLRC5, NOL4, NRXN1, NYAP2, OR10G8, OR2G6, OR2L13, OR2L2, OR2L8, OR2M3, OR2T3, OR2T33, OR2T4, OR2W3, OR4A15, OR4C15, OR4C6, OR4M1, OR4M2, OR5D18, OR5F1, OR5L1, OR5L2, OR6F1, OR8H2, OR8I2, OR8U1, ORC4, PAK5, PCDH17, PDE1A, PDE1C, PLXDC2, POM121L12, RPFIA2, RBP3, REG1A, REG1B, REG3A, REG3G, RPTN, RUNDC3B, SH3RF2, SLC15A2, SLC8A1, SYT10, SYT16, TAPBP, TPTE, TRHDE, TRIM48, TRIM51, ZIM3, ZNF479, ZNF536*

Genfusionen (RNA Panel; Oncomine Comprehensive Assay v3, n=51): *AKT2, ALK, AR, AXL, BRAF, BRCA1, BRCA2, CDKN2A, EGFR, ERBB2, ERBB4, ERG, ESR1, ETV1, ETV4, ETV5, FGFR1, FGFR2, FGFR3, FGR, FLT3, JAK2, KRAS, MDM4, MET, MYB, MYBL1, NF1, NOTCH1, NOTCH4, NRG1, NTRK1, NTRK2, NTRK3, NUTM2, PDGFRA, PDGFRB, PIK3CA, PPARG, PPKACA, PPKACB, PTEN, RAD51B, RAF1, RB1,RELA, RET, ROS1, RSPO2, RSPO3, TERT*

Oncomine™ Comprehensive Assay v3 Panel

Hotspots Gene (DNA Panel): *AKT1, AKT2, AKT3, ALK, AR, ARAF, AXL, BRAF, BTK, CBL, CCND1, CDK4, CDK6,*

CHEK2, CSF1R, CTNNB1, DDR2, EGFR, ERBB2, ERBB3, ERBB4, ERCC2, ESR1, EZH2, FGFR1, FGFR2, FGFR3, FGFR4, FLT3, FOXL2, GATA2, GNA11, GNAQ, GNAS, H3F3A, HIST1H3B, HNF1A,HRAS, IDH1, IDH2, JAK1, JAK2, JAK3, KDR, KIT, KNSTRN, KRAS, MAGON, MAP2K1, MAP2K2, MAP2K4, MAPK1, MAX, MDM4, MED12, MET, MTOR, MYC, MYCN, MYD88, NFE2L2, NRAS, NTRK1, NTRK2, NTRK3, PDGFRA, PDGFRB, PIK3CA, PIK3CB, PPP2R1A, PTPN11, RAC1, RAF1, RET, RHEB, RHOA, ROS1, SF3B1, SMAD4, SMO, SPOP, SRC, STAT3, TERT, TOP1, U2AF1, XPO1

Komplett abgedeckte Gene (DNA Panel): *ARID1A, ATM, ATR, ATRX, BAP1, BRCA1, BRCA2, CDK12, CDKN1B, CDKN2A, CDKN2B, CHEK1, CREBBP, FANCA, FANCD2, FANCI, FBXW7, MLH1, MRE11A, MSH2, MSH6, NBN, NF1, NF2, NOTCH1, NOTCH2, NOTCH3, PALB2, PIK3R1, PMS2, POLE, PTCH1, PTEN, RAD50, RAD51, RAD51B, RAD51C, RAD51D, RB1, RNF43, SETD2, SLX4, SMARCA4, SMARCB1, STK11, TP53, TSC1, TSC2*

Copy Number Variation (DNA Panel): *AKT1, AKT2, AKT3, ALK, AR, AXL, BRAF, CCND1, CCND2, CCND3, CCNE1, CDK2, CDK4, CDK6, EGFR, ERBB2, ESR1, FGF19, FGF3, FGFR1, FGFR2, FGFR3, FGFR4, FLT3, IGF1R, KIT, KRAS, MDM2, MDM4, MET, MYC, MYCL, MYCN, NTRK1, TRK2, NTRK3, PDGFRA, PDGFRB, PIK3CA, PIK3CB, PPARG, RICTOR, TERT*

Genfusionen (RNA Panel): *AKT2, ALK, AR, AXL, BRAF, BRCA1, BRCA2, CDKN2A, EGFR, ERBB2, ERBB4, ERG, ESR1, ETV1, ETV4, ETV5, FGFR1, FGFR2, FGFR3, FGR, FLT3, JAK2, KRAS, MDM4, MET, MYB, MYBL1, NF1, NOTCH1, NOTCH4, NRG1, NTRK1, NTRK2, NTRK3, NUTM2, PDGFRA, PDGFRB, PIK3CA, PPARG, PPKACA, PPKACB, PTEN, RAD51B, RAF1, RB1,RELA, RET, ROS1, RSPO2, RSPO3, TERT*

Oncomine™ Focus Assay Panel

35 Gene, Hotspots (Exone in Klammer): *AKT1* (1, 3), *ALK* (21-25), *AR* (6,8), *BRAF* (11, 15), *CDK4* (2), *CTNNB1* (3), *DDR2* (5), *EGFR* (3, 7, 12, 15, 18, 19, 20, 21), *ERBB2* (8, 17-22), *ERBB3* (2, 3, 6, 8, 9), *ERBB4* (18), *ESR1* (9), *FGFR2* (7, 8, 9, 12, 14), *FGFR3* (7, 9, 14, 16), *GNA11* (4, 5), *GNAQ* (4, 5), *HRAS* (2, 3), *IDH1* (4), *IDH2* (4), *JAK1* (14, 15, 16), *JAK2* (14), *JAK3* (11, 12, 15), *KIT* (8, 9, 11, 13, 17), *KRAS* (2, 3, 4), *MAP2K1* (2, 3, 6), *MAP2K2* (2), *MET* (14, 16, 19), *MTOR* (30, 39, 40, 43, 47, 53), *NRAS* (2, 3, 4), *PDGFRA* (12, 14, 18), *PIK3CA* (2, 5, 6, 8, 10, 14, 19, 21), *RAF1* (7, 12), *RET* (10, 11, 13, 15, 16), *ROS1* (36, 38), *SMO* (4, 6, 8, 9)

19 Copy Number Variationen (CNV): *ALK, AR, BRAF, CCND1, CDK4, CDK6, EGFR, ERBB2, FGFR1, FGFR2, FGFR3, FGFR4, KIT, KRAS, MET, MYC, MYCN, PDGFRA, PIK3CA*

23 Fusionsdriversgene: *ABL1, ALK, AKT3, AXL, BRAF, EGFR, ERBB2, ERG, ETV1, ETV4, ETV5, FGFR1, FGFR2, FGFR3, MET, NTRK1, NTRK2, NTRK3, PDGFRA, PPARG, RAF1, RET, ROS1*

Oncomine™ BRCA Research Assay Panel

Im Panel werden alle kodierenden Abschnitte der *BRCA1* (Exone 2-24) und *BRCA2* (Exone 2-27) Gene gedeckt.

Oncomine Tumor Mutation Load Assay (TMB)

Mutationsanalyse der 409 Gene:

TNFRSF14, PLEKHG5, PIK3CD, MTOR, SDHB, PAX7, ARID1A, LCK, MYCL1, MPL, MUTYH, TAL1, CMPK1, CDKN2C, JUN, JAK1, BCL10, DPYD, TRIM33, NRAS, NOTCH2, PDE4DIP, ITGA10, BCL9, MCL1, ARNT, CKS1B, MUC1, NTRK1, SDHC, DDR2, PBX1, ABL2, RNASEL, RNF2, TPR, PTGS2, CDC73, PIK3C2B, MDM4, IKBKE, MARK1, PARP1, MTR, FH, AKT3, SOX11, MYCN, NCOA1, DNMT3A, ALK, EML4, MSH2, MSH6, BCL11A, REL, XPO1, TCF7L1, AFF3, PAX8, ERCC3, LRP1B, ACVR2A, NFE2L2, PMS1, SF3B1, CREB1, IDH1, ERBB4, FN1, STK36, PAX3, UGT1A1, CRBN, FANCD2, VHL, PPARG, RAF1, XPC, TGFBR2, MLH1, ITGA9, MYD88, CTNNB1, LTF, SETD2, BAP1, PBRM1, MAGI1, MITF, FOXP1, EPHA3, GATA2, EPHB1, PIK3CB, FOXL2, ATR, PIK3CA, SOX2, BCL6, LPP, TNK2, FGFR3, WHSC1, RHOH, PHOX2B, PDGFRA, KIT, KDR, LPHN3, AFF1, NFKB1, TET2, IL2, FBXW7, SDHA, MTRR, IL7R, GDNF, LIFR, IL6ST, PIK3R1, APC, RAD50, CTNNA1, CSF1R, PDGFRB, NPM1, FGFR4, NSD1, FLT4, IRF4, DEK, POU5F1, NOTCH4, DAXX, PIM1, FOXP4, HSP90AB1, PKHD1, ICK, DST, BAI3, MAP3K7, EPHA7, PRDM1, FOXO3, ROS1, SGK1, MYB, TNFAIP3, ESR1, SYNE1, IGF2R, RPS6KA2, CARD11, PMS2, ETV1, IKZF1, EGFR, SBDS, AKAP9, CDK6, SAMD9, TRRAP, EPHB4, PIK3CG, MET, POT1, GRM8, SMO, TRIM24, BRAF, EPHB6, EZH2, MLL3, XRCC2, WRN, GPR124, FGFR1, KAT6A, IKBKB, HOOK3, PRKDC, PLAG1, NCOA2, NBN, RUNX1T1, UBR5, CSMD3, EXT1, MYC, RECQL4, JAK2, PTPRD, PSIP1, CDKN2A, CDKN2B, TAF1L, FANCG, PAX5, GNAQ, SYK, FANCC, PTCH1, XPA, TLR4, ABL1, NUP214, TSC1, RALGDS, BRD3, NOTCH1, KLF6, GATA3, MLLT10, RET, MAPK8, NCOA4, TET1, KAT6B, BMPR1A, PTEN, FAS, CYP2C19, BLNK, TLX1, NFKB2, SUFU, TCF7L2, FGFR2, HRAS, IGF2, NUP98, RRM1, FANCF, WT1, EXT2, DDB2, MEN1, CCND1, NUMA1, MRE11A, MAML2, BIRC3, BIRC2, GUCY1A2, ATM, SDHD, MLL, CBL, CHEK1, ETS1, FLI1, CCND2, ING4, ZNF384, KRAS, ADAMTS20, ARID2, MLL2, ATF1, SMUG1, ERBB3, DDIT3, CDK4, MDM2, PTPN11, HNF1A, HCAR1, EP400, CDK8, FLT3, FLT1, FOXO1, RB1, ERCC5, IRS2, LAMP1, BCL2L2, NKX21, NIN, HIF1A, TSHR, TRIP11, DICER1, TCL1A, BCL11B, HSP90AA1, AKT1, THBS1, BUB1B, CASC5, LTK, TGM7, TCF12, MAP2K1, PML, NTRK3, IDH2, BLM, IGF1R, TSC2, CREBBP, SOCS1, ERCC4, MYH11, PALB2, IL21R,

CYLD, MMP2, CDH11, CDH5, CDH1, MAF, FANCA, NLRP1, TP53, PER1, AURKB, MAP2K4, FLCN, NF1, CDK12, PGAP3, ERBB2, RARA, ETV4, ITGB3, COL1A1, HLF, FANCJ, CD79B, PRKAR1A, 43352, BIRC5, RNF213, ZNF521, CDH2, SMAD2, MBD1, SMAD4, DCC, MALT1, CDH20, BCL2, STK11, TCF3, GNA11, FZR1, MAP2K2, KEAP1, SMARCA4, JAK3, PIK3R2, CRTC1, CCNE1, CEBPA, AKT2, AXL, CD79A, CIC, BCL3, MARK4, ERCC2, ERCC1, PPP2R1A, AURKC, BCL2L1, ASXL1, SRC, MAFB, TOP1, PLCG1, PTPRT, AURKA, GNAS, RUNX1, ERG, ITGB2, CRKL, MAPK1, BCR, SMARCB1, MN1, CHEK2, NF2, TIMP3, MYH9, PDGFB, EP300, CYP2D6, USP9X, KDM6A, SSX1, WAS, GATA1, TFE3, KDM5C, FAM123B, AR, TAF1, ATRX, TBX22, BTK, PAK3, SH2D1A, MAGEA1, G6PD

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