Supplementary table 2: List of genes tested (NGS technique)

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| **Genes analyzed** | **Lab; Panel**  | **Proband #** |
| AKT1, APC, AR, ATM, ATR, AXIN2, BAP1, BARD1, BLM, BMPR1A, BRCA1, BRCA2, BRIP1, BTK, CDC73, CDH1, CDK4, CDKN1C ,CDKN2A, CHEK2, DICER1, EPCAM, FANCC, GALNT12, GREM1, HOXB13, KIT, MEN1, MET, MLH1, MRE11A, MSH2, MSH6, MUTYH, NBN, NF1, NF2, PALB2, PALLD, PDGFRA, PIK3CA, PMS1, PMS2, POLD1, POLH, PRKAR1A, PRSS1, PTCH1, PTEN, RAD50, RAD51, RAD51C, RAD51D, RB1, RBBP8, RET, SDHA, SDHAF2, SDHB, SDHC, SDHD, SLX4, SMAD4, SMARCA4, SPINK1, STK11, TP53, TSC1,TSC2, VHL, WT1, XRCC2, XRCC3. | G.G.A; Cancer panel v.2.1(72 genes) | 1, 5, 7 |
| APC, ATM, AXIN2, BARD1, BMPR1A, BRCA1, BRCA2, BRIP1, CDH1, CDK4, CDKN2A, CHEK2, DICER1, EPCAM, GREM1, HOXB13, MLH1, MSH2, MSH3, MSH6, MUTYH, NBN, NF1, NTHL1, PALB2, PMS2, POLD1, POLE, PTEN, RAD51C, RAD51D, RECQL, SMAD4, SMARCA4, STK11, TP53. | Ambry (California); CancerNext®(36 genes) | 6 |
| APC, ATM, BAP1, BARD1, BMPR1A, BRCA1,BRCA2, BRIP1, CDH1, CDK4, CDKN2A (p14ARF and p16INK4a), CHEK2, EPCAM, GREM1, MITF, MLH1, MSH2,MSH6, MUTYH, NBN, PALB2, PMS2, POLD1, POLE, PTEN,RAD51C, RAD51D, SMAD4, STK11, TP53. | Color (California); Hereditary cancer genetic test(31 genes) | 2 |
| ABRAXAS1, AIP, AKT1, ALK,ANKRD26, APC, AR, ATM, ATR, AXIN2, BAP1, BARD1, BLM, BMPR1A, BRCA1, BRCA2, BRIP1, CASR, CBL, CCNE1, CDC73, CDH1, CDK4, CDKN1B, CDKN1C, CDKN2A, CEBPA, CHEK1, CHEK2, EGFR, EPCAM, ETV6, FANCM, FH, FLCN, GALT12, GATA2, GEN1, GPC3, GREM1, HOXB13, HRAS, IKZF1, KIF1B, KIT, KLLN, LMO1, MAX, MDM2, MEN1, MET, MITF, MLH1, MLH3, MRE11, MSH2, MSH3, MSH6, MSR1, MUTYH, NBN, NF1, NF2, NKX2-1, NPAT, NTRK1, NTRK3, PALB2, PALLD, PAX5, PDGFRA, PHOX2B, PIK3CA, PMS2, POLD1, POLE, POT1, PRKAR1A, PRSS1, PTCH1, PTEN, PTPN11, RAD50, RAD50B, RAD51C, RAD51D, RB1, RECQL, RECQL4, REST, RET, RINT1, RNF43, RPS20, RTEL1, RUNX1, SAMD9, SAMD9L, SDHA, SDHAF2, SDHB, SDHC, SDHD, SEC23B, SLX4, SMAD4, SMARCA4, SMARCB1, SMARCE1, SRD5A2, SRP72, STK11, SUFU, TERT, TMEM127, TP53, TSC1, TSC2, VHL, WRN, WT1, WWP1, XRCC2, XRCC3. | Maccabi Genetic lab; Oncogenetic panel(123 genes)  | 4, 8 |
| AIP, ALK, APC, ATM, BAP1, BLM, BMPR1A, BRCA1, BRCA2, BRIP1, BUB1B, CDC73, CDH1, CDK4, CDKN1C ,CDKN2A, CEBPA, CEP57, CHEK2, CYLD, DDB2, DICER1, DIS3L2, EGFR, EPCAM, ERCC2, ERCC3, ERCC4, ERCC5, EXT1, EXT2, EZH2, FANCA, FANCB, FANCC, FANCD2, FANCE, FANCF, FANCG, FANCI, FANCL, FANCM, FH, FLCN,GATA2, GPC3, HNF1A, HRAS, KIT, MAX, MEN1, MET, MLH1, MSH2, MSH6, MUTYH, NBN, NF1, NF2, NSD1,PALB2, PHOX2B, PMS1, PMS2, PRF1, PRKAR1A, PTCH1, PTEN, RAD51C, RAD51D, RB1, RECQL4, RET, RHBDF2,RUNX1, SBDS, SDHAF2, SDHB, SDHC, SDHD, SLX4, SMAD4, SMARCB1, STK11, SUFU, TMEM127, TP53, TSC1,TSC2, VHL, WRN, WT1, XPA, XPC. | Clalit personalized (Israel); Trusight® (94 genes) | 3 |