# QIAseq Multimodal Panels

# Human Sarcoma

### Cat. nos. 333932 UHS-006Z-12 and 333935 UHS-006Z-96

### For consolidated targeted next-generation sequencing of DNA and RNA

The QIAseq Multimodal Human Sarcoma Panel permits the sequencing the whole coding region of 161 genes frequently mutated in sarcomas as well as the detection of fusions to 102 genes also frequently observed in sarcoma samples, with 11243 and 665 primers respectively. Such frequently detected mutations and fusions are likely to be relevant or even important to sarcoma biology and may be used in translational research to classify samples with known phenotypes. Using the Catalogue of Somatic Mutations in Cancer (COSMIC), frequently mutated genes and frequently detected fusions were collected for angiosarcomas, chondrosarcomas, clear cell sarcomas, endometrial stromal sarcomas, epithelioid sarcomas, Ewing sarcomas, fibrosarcoma, gastrointestinal stromal tumors (GIST), leiomyosarcomas, liposarcomas, osteosarcomas, rhabdomyosarcomas, synovial sarcomas, and other sarcomas. From the same cancer subtypes, additional fusions were also collected from the Archer Quiver Database, and more mutations and more fusions were both requested and suggested by QIAGEN KOLs and SMEs and found in other peer-reviewed publications. Using digital DNA sequencing, SNP/indels in, and fusions to, two different focused panels of genes relevant to sarcomas can be detected with this primer pool.

For further details, consult the *QIAseq Multimodal Panels Handbook*.

## Shipping and storage

QIAseq Multimodal Panels (except QIAseq Beads, QIAseq Bead Binding Buffer, and Nuclease-free Water) are shipped on dry ice and should be stored immediately upon receipt at −30°C to −15°C in a constant-temperature freezer. QIAseq Beads, QIAseq Bead Binding Buffer, and Nuclease- free Water are shipped in a separate box on cold packs. Upon receipt, QIAseq Beads, QIAseq Bead Binding Buffer, and Nuclease-free Water should be stored at 2–8°C. QIAseq Multimodal Index kits are shipped on dry ice and should be stored at −30°C to −15°C upon arrival.

**Note**: Open the package and store the products appropriately immediately upon receipt.

## Panel Contents

| **QIAseq Multimodal Panel Catalog Number** | **333932** | **333935** |
|---|---|---|
| **Number of samples** | **12** | **96** |
| Multimodal DHS Panel (DNA) | 120 µL | 960 µL |
| Multimodal VHS Panel (RNA) | 96 µL | 768 µL |
| Fragmentation Buffer, 10x | 40 µL | 192 µL |
| Fragmentation Enzyme Mix | 90 µL | 384 µL |
| FERA Solution | 15 µL | 60 µL |
| Side Reaction Reducer | 48 µL | 192 µL |
| FG Solution | 170 µL | 170 µL |
| DNA Ligase | 75 µL | 600 µL |
| Ligation Solution | 125 µL | 970 µL |
| Ligation Buffer, 5x | 160 µL | 1250 µL |
| DNA Ligation Adapter | 34 µL | 270 µL |
| ATP Solution | 36 µL | 290 µL |
| PAP Enzyme | 12 µL | 96 µL |
| PAP Dilution Buffer, 10x | 24 µL | 192 µL |
| T4 Polynucleotide Kinase | 12 µL | 125 µL |
| EZ Reverse Transcriptase | 15 µL | 150 µL |
| RNase Inhibitor | 12 µL | 96 µL |
| Multimodal RT Primer | 12 µL | 96 µL |
| Multimodal RT Buffer, 5x | 60 µL | 480 µL |
| Multimodal RT Enhancer | 12 µL | 48 µL |
| TEPCR Buffer, 5x | 60 µL x 2 | 500 µL x 2 |
| HotStarTaq® DNA Polymerase (6 U/µL) | 60 µL | 480 µL |
| Nuclease-free Water | 1 tube | 10 mL |
| QIAseq Beads | 10 mL | 38.4 mL x 2 |
| QIAseq Bead Binding Buffer | 10.2 mL | 10.2 mL x 2 |

## Gene Table: DNA SNP/indel

| Gene Symbol | Gene Symbol | Gene Symbol | Gene Symbol |
|---|---|---|---|
| AFF3 | AKAP9 | AKT1 | ALK |
| APC | AR | ARID1A | ARID1B |
| ARID2 | ASXL1 | ATM | ATR |
| ATRX | BCOR | BIRC6 | BRAF |
| BRCA1 | BRCA2 | BRD4 | CACNA1D |
| CAMTA1 | CARD11 | CASP8 | CBL |
| CD209 | CD79B | CDH1 | CDKN2A |
| CHD4 | CIC | CLTCL1 | CNTNAP2 |
| COL2A1 | COL3A1 | CREBBP | CSMD3 |
| CTNNB1 | DAXX | DCC | DDX10 |
| DGCR8 | DICER1 | DNMT3A | EED |
| EGFR | EP300 | EPHA3 | EPHA7 |
| EPS15 | ERBB2 | ERBB3 | ERBB4 |
| ERCC4 | ERCC5 | EZH2 | FAM131B |
| FAM47C | FANCA | FAT1 | FAT4 |
| FBXW7 | FGFR1 | FGFR2 | FGFR3 |
| FGFR4 | FLNA | FLT3 | FLT4 |
| FOXP1 | GNAS | GRIN2A | H3-3A |
| HNF1A | HRAS | IDH1 | IDH2 |
| IRS4 | JAK1 | JAK3 | KDM6A |
| KDR | KIT | KMT2A | KMT2C |
| KMT2D | KRAS | LRP1B | MAML2 |
| MED12 | MET | MLH1 | MLLT3 |
| MPL | MSH2 | MTOR | MUC16 |
| MUC4 | MUTYH | MYH9 | MYOD1 |
| NBEA | NCOR1 | NCOR2 | NF1 |
| NF2 | NOTCH1 | NOTCH2 | NPM1 |
| NRAS | NSD1 | NTRK3 | PALB2 |
| PAX3 | PAX5 | PBRM1 | PDGFRA |
| PDGFRB | PIK3CA | PIK3CB | PIK3R1 |
| PLCG1 | PML | POLE | PRDM1 |
| PRDM2 | PREX2 | PTCH1 | PTEN |
| PTPN11 | PTPN13 | PTPRB | PTPRD |
| PTPRT | RB1 | RECQL4 | ROBO2 |
| ROS1 | SDHA | SETD2 | SFRP4 |
| SH2B3 | SMAD2 | SMARCA4 | SMARCB1 |
| SMARCD1 | SPEN | STAG2 | SUFU |
| TERT | TET2 | TGFBR2 | TNC |
| TOP1 | TP53 | TRAF7 | TRRAP |
| TSC1 | TSC2 | WNK2 | XPC |
| ZFHX3 | | | |

## Gene Table: RNA Fusions

| Gene Symbol | Gene Symbol | Gene Symbol | Gene Symbol |
|---|---|---|---|
| ACVR2A | ALK | ASPSCR1 | ATF1 |
| BCOR | BRAF | CAMTA1 | CCNB3 |
| CDX1 | CEP85L | CIC | CITED2 |
| COL1A1 | COL6A3 | CREB1 | CREB3L1 |
| CREB3L2 | CREM | CSF1 | CXorf67 |
| DDIT3 | DVL2 | EPC1 | ERG |
| ETV1 | ETV4 | ETV6 | EWSR1 |
| FEV | FGF1 | FGFR1 | FLI1 |
| FN1 | FOXO1 | FOXO4 | FUS |
| GLI1 | HEY1 | HMGA2 | IRF2BP2 |
| JAZF1 | KLF17 | LEUTX | LGR5 |
| LMNA | MAML3 | MBTD1 | MEAF6 |
| MED12 | MET | MKL2 | NAB2 |
| NCOA1 | NCOA2 | NCOA4 | NFATC2 |
| NPM1 | NR4A3 | NTRK1 | NTRK3 |
| NUP107 | NUTM2A | NUTM2B | PATZ1 |
| PAX3 | PAX7 | PBX3 | PDGFB |
| PHF1 | PLAG1 | POU5F1 | PRDM10 |
| RELA | RET | ROS1 | RUNX1 |
| RUNX1T1 | S100A10 | SFPQ | SMARCA5 |
| SP3 | SRF | SS18 | SS18L1 |
| SSX1 | SSX2 | SSX4 | STAT6 |
| SUZ12 | TAF15 | TCF12 | TEAD1 |
| TFE3 | TFG | TOM1L2 | TPM3 |
| USP6 | VGLL2 | WT1 | YAP1 |
| YWHAE | ZC3H7B | | |

## Functional Groupings

DNA SNP/INDELS:

**Alveolar Soft Part Sarcomas:** APC, CDH1, KMT2D, NTRK3, PTEN, TP53.

**Angiosarcomas & Epitheliod Haemangioendotheliomas:** AKT1, ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATM, ATR, ATRX, BRAF, BRCA1, BRCA2, CASP8, CDKN2A, CIC, CREBBP, CSMD3, CTNNB1, DCC, EGFR, EP300, EPHA3, EPHA7, ERBB2, ERBB3, ERBB4, EZH2, FAT1, FBXW7, FGFR1, FGFR2, FGFR3, FGFR4, FLT3, FLT4, HRAS, JAK3, KDM6A, KDR, KMT2D, KRAS, LRP1B, MED12, MET, MLH1, MPL, MSH2, MTOR, MUC16, NBEA, NCOR1, NF1, NOTCH2, NRAS, NSD1, NTRK3, PAX5, PBRM1, PDGFRB, PIK3CA, PIK3CB, PIK3R1, PLCG1, PRDM1, PREX2, PTCH1, PTEN, PTPRB, PTPRD, PTPRT, ROS1, SETD2, SMARCD1, TERT, TGFBR2, TP53, TRAF7, TRRAP, TSC1, TSC2, ZFHX3.

**Chondrosarcomas:** AKAP9, ALK, AR, ARID1A, ATRX, CACNA1D, CAMTA1, CDKN2A, CNTNAP2, COL2A1, DNMT3A, EED, EPHA3, EPHA7, ERBB3, ERBB4, FLT4, H3-3A, HRAS, IDH1, IDH2, IRS4, JAK1, KDM6A, KDR, KMT2D, LRP1B, MLLT3, MUC16, MUTYH, MYH9, NF2, NRAS, PALB2, POLE, PTCH1, PTEN, PTPRB, PTPRT, RB1, ROS1, SDHA, SETD2, SMAD2, SMARCB1, SUFU, TERT, TET2, TP53, TSC1, ZFHX3.

**Chordomas:** ALK, APC, AR, ARID1A, ATM, CBL, CDKN2A, CTNNB1, KDR, KIT, KMT2A, KMT2D, NRAS, PIK3CA, PTEN, SETD2, SMARCB1, TP53.

**Clear Cell Sarcomas:** BRAF, CDKN2A, EGFR, NRAS, PTEN, TP53.

**Dermatofibrosarcoma Protuberans:** FGFR1, MED12, NF1, TGFBR2.

**Desmoplastic Small Round Cell Tumors:** APC, CIC, CREBBP, DAXX, EGFR, EP300, EPHA3, KMT2C, MTOR, ROS1, SMARCA4, TET2.

**Endometrial Stromal Sarcomas:** ASXL1, CTNNB1, DCC, ERBB3, FBXW7, FGFR2, FLT3, KMT2C, KRAS, MED12, PIK3CA, PTCH1, TP53.

**Epithelioid Sarcomas:** DICER1, SMARCB1, TET2, TGFBR2.

**Ewing Sarcomas:** AFF3, AKAP9, ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATM, ATR, ATRX, BCOR, BIRC6, BRAF, BRCA1, BRCA2, CACNA1D, CAMTA1, CARD11, CBL, CD209, CD79B, CDH1, CDKN2A, CHD4, CIC, CLTCL1, COL2A1, COL3A1, CREBBP, CSMD3, CTNNB1, DAXX, DCC, DDX10, DGCR8, DICER1, DNMT3A, EED, EGFR, EP300, EPHA3, EPHA7, EPS15, ERBB2, ERBB4, ERCC5, EZH2, FAM131B, FAM47C, FANCA, FAT1, FAT4, FBXW7, FGFR1, FGFR3, FGFR4, FLNA, FLT4, GNAS, GRIN2A, HNF1A, HRAS, IDH1, IDH2, IRS4, KDR, KIT, KMT2A, KMT2C, KMT2D, KRAS, LRP1B, MAML2, MED12, MET, MLH1, MLLT3, MSH2, MTOR, MUC16, MUC4, MUTYH, MYH9, MYOD1, NCOR1, NCOR2, NF1, NF2, NOTCH1, NOTCH2, NPM1, NRAS, NSD1, NTRK3, PALB2, PAX5, PBRM1, PDGFRB, PIK3CA, PIK3CB, PIK3R1, PLCG1, PML, POLE, PRDM1, PRDM2, PREX2, PTCH1, PTEN, PTPN13, PTPRB, PTPRD, PTPRT, RB1, RECQL4, ROS1, SDHA, SETD2, SMARCA4, SMARCB1, SPEN, STAG2, SUFU, TERT, TET2, TNC, TOP1, TP53, TRAF7, TRRAP, TSC1, TSC2, XPC, ZFHX3.

**Fibrosarcomas:** ATRX, BCOR, BRCA1, CDKN2A, CTNNB1, EGFR, EZH2, FGFR3, FLT3, FOXP1, KDM6A, KDR, KIT, KRAS, NF1, NF2, NRAS, POLE, PTEN, RB1, TERT, TP53, TRAF7.

**Gastrointestinal Stromal Tumors (GIST):** ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATR, ATRX, BRAF, BRCA2, CARD11, CBL, CDH1, CDKN2A, CHD4, CREBBP, DAXX, DICER1, EGFR, EP300, EPHA7, ERBB4, FAT1, FBXW7, FGFR1, FLT4, FOXP1, H3-3A, HNF1A, JAK1, KDM6A, KDR, KIT, KMT2A, KMT2C, KMT2D, KRAS, MED12, MSH2, MTOR, MYOD1, NF1, NF2, NOTCH1, NOTCH2, PBRM1, PDGFRA, PDGFRB, PIK3CA, POLE, PTCH1, PTEN, PTPRT, RB1, RECQL4, ROS1, SDHA, SETD2, SH2B3, SPEN, TERT, TET2, TGFBR2, TP53, TRAF7, TSC1, TSC2, ZFHX3.

**Kaposi Sarcomas:** BRAF, PIK3CA, TP53.

**Leiomyosarcomas:** ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATM, ATR, ATRX, BRCA1, BRCA2, BRD4, CARD11, CBL, CDH1, CREBBP, DAXX, DNMT3A, EED, EP300, EPHA3, ERBB3, ERBB4, ERCC5, EZH2, FGFR1, FGFR3, FOXP1, GRIN2A, JAK1, JAK3, KDM6A, MET, MPL, MSH2, NCOR1, NF2, NPM1, PAX5, RECQL4, TGFBR2, TOP1, TRAF7.

**Liposarcomas:** AKT1, ALK, APC, ARID1A, ARID1B, ATM, ATRX, BRAF, BRCA2, BRD4, CBL, CD79B, CDH1, CDKN2A, CIC, COL3A1, CTNNB1, DICER1, DNMT3A, EGFR, EP300, ERBB2, ERBB4, FAT1, FAT4, FBXW7, FGFR1, FGFR2, FGFR3, FOXP1, HRAS, JAK1, JAK3, KDM6A, KDR, KIT, KMT2A, KMT2C, KMT2D, KRAS, MAML2, MLH1, MPL, MUTYH, NCOR1, NF1, NF2, NOTCH2, NSD1, PBRM1, PDGFRA, PIK3CA, PIK3R1, POLE, PRDM1, PTEN, RB1, RECQL4, ROS1, SDHA, SETD2, SMARCA4, TERT, TET2, TP53, TSC1, ZFHX3.

**Malignant Peripheral Nerve Sheath Tumors (MPNST):** ARID2, BCOR, BIRC6, BRAF, BRCA1, CBL, CDKN2A, EED, FAT1, KRAS, NF1, NRAS, PAX5, PDGFRA, STAG2, TERT, TP53.

**Osteosarcomas:** AKT1, ALK, APC, AR, ARID1A, ASXL1, ATR, ATRX, BCOR, BRAF, BRCA1, BRCA2, BRD4, CACNA1D, CAMTA1, CARD11, CBL, CD209, CDH1, CDKN2A, CHD4, CLTCL1, COL2A1, CREBBP, CSMD3, DAXX, DCC, DDX10, DNMT3A, EGFR, EP300, EPHA7, ERBB4, FAM47C, FANCA, FAT4, FBXW7, FGFR3, FGFR4, FLNA, FLT3, FOXP1, GNAS, GRIN2A, H3-3A, IDH2, JAK1, JAK3, KDR, KMT2A, KMT2C, KMT2D, LRP1B, MED12, MET, MLH1, MLLT3, MUC16, MUC4, NBEA, NCOR1, NCOR2, NF1, NF2, NOTCH2, NPM1, NTRK3, PAX3, PBRM1, PDGFRB, PIK3CA, PIK3CB, PIK3R1, POLE, PRDM1, PRDM2, PREX2, PTCH1, PTEN, PTPRD, PTPRT, RB1, RECQL4, ROBO2, ROS1, SDHA, SETD2, SMAD2, SMARCA4, SPEN, STAG2, SUFU, TERT, TET2, TGFBR2, TNC, TP53, TRRAP, TSC1, TSC2, WNK2, XPC, ZFHX3.

**Perivascular Epithelioid Cell Tumors (PEComa):** ALK, ATM, ATRX, CIC, JAK3, KDM6A, MED12, NOTCH2, NTRK3, RB1, SDHA, TP53, TSC1, TSC2.

**Pleomorphic Sarcomas (Malignant Fibrous Histiocytoma):** ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATM, ATR, ATRX, BRAF, BRCA1, BRCA2, BRD4, CARD11, CASP8, CD79B, CDKN2A, CIC, CTNNB1, DICER1, DNMT3A, EGFR, EP300, EPHA3, ERBB2, ERBB3, ERBB4, EZH2, FANCA, FAT1, FBXW7, FGFR1, FGFR4, FLT3, FOXP1, GRIN2A, HRAS, IDH1, JAK1, JAK3, KIT, KMT2A, KMT2C, KMT2D, KRAS, MET, MLH1, MSH2, MTOR, MUTYH, MYOD1, NCOR1, NF1, NF2, NOTCH1, NOTCH2, NPM1, NRAS, NSD1, NTRK3, PALB2, PAX5, PBRM1, PDGFRB, PIK3CA, POLE, PRDM1, PTCH1, PTEN, PTPN11, PTPRD, PTPRT, RB1, ROS1, SETD2, SMARCA4, SMARCB1, SUFU, TERT, TET2, TGFBR2, TOP1, TP53, TRAF7, TSC2, ZFHX3.

**Rhabdoid Tumors:** CREBBP, KDM6A, KMT2C, MUC16, PBRM1, SETD2, SMARCA4, SMARCB1, TSC2.

**Rhabdomyosarcomas:** AFF3, AKAP9, ALK, APC, AR, ARID1A, ARID1B, ARID2, ASXL1, ATM, ATR, ATRX, BCOR, BRAF, BRCA1, BRCA2, CASP8, CDKN2A, CHD4, CIC, CLTCL1, CNTNAP2, COL2A1, CREBBP, CSMD3, CTNNB1, DAXX, DCC, DGCR8, DICER1, DNMT3A, EP300, EPHA3, EPHA7, EPS15, ERBB2, ERBB3, ERCC4, ERCC5, EZH2, FAM131B, FAM47C, FANCA, FAT1, FAT4, FBXW7, FGFR1, FGFR2, FGFR3, FGFR4, FLNA, FLT3, FLT4, FOXP1, GNAS, GRIN2A, HNF1A, HRAS, IRS4, KDM6A, KDR, KIT, KMT2C, KMT2D, KRAS, LRP1B, MAML2, MED12, MET, MLH1, MPL, MSH2, MTOR, MUC16, MUTYH, MYH9, MYOD1, NBEA, NCOR2, NF1, NOTCH1, NOTCH2, NRAS, NSD1, NTRK3, PALB2, PDGFRA, PDGFRB, PIK3CA, PML, POLE, PRDM1, PRDM2, PREX2, PTCH1, PTEN, PTPN11, PTPN13, PTPRT, RECQL4, ROBO2, ROS1, SETD2, SFRP4, SH2B3, SMARCA4, SMARCB1, TET2, TNC, TP53, TRAF7, TRRAP, TSC1, TSC2, WNK2, XPC, ZFHX3.

**Solitary Fibrous Tumors:** ALK, APC, ARID2, CBL, EP300, ERBB4, FAT1, FBXW7, FGFR1, FGFR3, KMT2D, NF1, NSD1, PIK3R1, PTEN, SPEN, SUFU, TERT, TP53.

**Synovial Sarcomas:** ARID1B, ARID2, BCOR, BRAF, CDH1, CTNNB1, EGFR, ERBB4, FGFR1, FLT4, HRAS, KDR, KMT2A, KMT2C, KMT2D, KRAS, MED12, MLH1, PALB2, PDGFRA, PIK3CA, PIK3R1, PRDM1, PTEN, SETD2, TERT, TP53, TRAF7, TRRAP, ZFHX3.

**Undifferentiated; Unclassified or Other Sarcomas:** ARID2, ATM, ATRX, BRCA2, CIC, CREBBP, CTNNB1, DICER1, EED, EGFR, EPHA7, FBXW7, FLT3, FOXP1, H3-3A, HNF1A, KDM6A, MED12, MET, NCOR1, NOTCH2, NSD1, PALB2, PBRM1, PTCH1, PTPRD, ROS1, SH2B3, SPEN, STAG2, SUFU, TP53.

GENE FUSIONS:

**Alveolar Soft Part Sarcomas:** ASPSCR1, TFE3.

**Angiosarcomas & Epitheliod Haemangioendotheliomas:** CAMTA1, CEP85L, CIC, LEUTX, ROS1, TFE3, YAP1.

**Askins Tumors:** ERG, EWSR1, FLI1, FUS.

**Chondrosarcomas:** ACVR2A, CDX1, EWSR1, FN1, HEY1, IRF2BP2, NCOA2, NR4A3, TAF15, TCF12, TFG.

**Chondrosarcomas;** Myxoid: NR4A3, TAF15.

**Clear Cell Sarcomas:** ATF1, CREB1, EWSR1, FLI1, NUTM2B, YWHAE.

**Congenital (Infantile) Fibrosarcomas:** ETV6, MET, NTRK3, TFG.

**Dermatofibrosarcoma Protuberans:** COL1A1, PDGFB.

**Desmoplastic Small Round Cell Tumors:** ERG, EWSR1, FLI1, PATZ1, WT1.

**Endometrial Stromal Sarcomas:** ALK, BCOR, CXorf67, EPC1, FN1, JAZF1, MBTD1, MEAF6, NUTM2A, NUTM2B, PHF1, SUZ12, YWHAE, ZC3H7B.

**Epithelioid Sarcomas:** CREB3L1, CREB3L2, EWSR1, FUS, KLF17, SS18, SSX1.

**Ewing's Sarcomas:** CIC, ERG, ETV1, ETV4, EWSR1, FEV, FLI1, FOXO4, FUS, NFATC2, SMARCA5, SP3.

**Fibrosarcomas:** BRAF, COL1A1, CREB3L1, CREB3L2, EWSR1, FUS, LMNA, NTRK1, PDGFB, TOM1L2.

**Leiomyosarcomas:** EWSR1, PBX3, WT1.

**Liposarcomas:** DDIT3, EWSR1, FUS, LGR5, NUP107.

**Myofibroblastic Sarcomas:** ALK, LMNA, NTRK1, RELA, ROS1, SRF, TFG, TPM3, YWHAE.

**Perivascular Epithelioid Cell Tumors (PEComa):** DVL2, SFPQ, TFE3.

**Pleomorphic Sarcomas (Malignant Fibrous Histiocytoma):** CITED2, MED12, PRDM10.

**Rhabdoid Tumors:** NCOA4, RET.

**Rhabdomyosarcomas:** CITED2, EWSR1, FLI1, FOXO1, NCOA1, NCOA2, PAX3, PAX7, SRF, TEAD1, VGLL2.

**Solitary Fibrous Tumors:** NAB2, STAT6.

**Synovial Sarcomas:** COL6A3, CSF1, S100A10, SS18, SS18L1, SSX1, SSX2, SSX4.

**Undifferentiated; Unclassified or Other Sarcomas:** ATF1, BCOR, CCNB3, CREM, ERG, ETV4, EWSR1, FGF1, FGFR1, FLI1, FN1, FOXO1, FUS, JAZF1, MAML3, PAX3, POU5F1, RUNX1, RUNX1T1, SUZ12.

**Other Sarcomas:** ALK, ASPSCR1, COL1A1, DDIT3, ETV6, EWSR1, FOXO1, FUS, GLI1, HMGA2, LMNA, MKL2, NPM1, NTRK1, NTRK3, PAX3, PAX7, PDGFB, PLAG1, SS18, SSX1, SSX2, TFE3, USP6, WT1.

## Ordering Information

| Product | Contents | Cat. no. |
|---|---|---|
| QIAseq Multimodal Panel (12) | Kit containing all reagents (except indexes) for multimodal (DNA and RNA) sequencing; fixed small panel for a total of 12 samples: 12 DNA and 12 RNA libraries | 333932 |
| QIAseq Multimodal Panel (96) | Kit containing all reagents (except indexes) for multimodal (DNA and RNA) | 333935 |
| QIAseq Multimodal HC Panel (12) | Kit containing all reagents (except indexes) for multimodal (DNA and RNA) sequencing; fixed high content (HC) panel for a total of 12 samples: 12 DNA and 12 RNA libraries | 333942 |
| QIAseq Multimodal HC Panel (96) | Kit containing all reagents (except indexes) for multimodal (DNA and RNA) sequencing; fixed high content (HC) panel for a total of 96 samples: 96 DNA and 96 RNA libraries | 333945 |
| QIAseq Multimodal Custom Panel (96) | Kit containing all reagents (except indexes) for multimodal (DNA and RNA) sequencing; custom panel for a total of 96 samples: 96 DNA and 96 RNA libraries | 333955 |
| QIAseq Multimodal Index I SW (12) | Box containing oligos, enough to process a total of 12 samples, for indexing up to a | 333982 |
| QIAseq Multimodal HT SW 96 UDI | Box containing oligos, enough to process a total of 96 samples, for indexing up to a total of 96 samples (96 for DNA and 96 for RNA) for multimodal panel sequencing on Illumina platforms. Note: For Separated Enrichment Workflow (SW) for Targeted Enrichment | 333986 |
| QIAseq Multimodal Index I (12) | Box containing oligos, enough to process a total of 12 samples, for indexing up to a total of 12 samples (12 for DNA and 12 for RNA libraries) for multimodal panel sequencing on Illumina platforms. Note: For Combined Enrichment Workflow (CW) for Targeted Enrichment | 333962 |
| QIAseq Multimodal HT CW 96 UDI | Box containing oligos, enough to process a total of 96 samples, for indexing up to a | 333979 |
| **Related products** | | |
| QIAseq DNA QuantiMIZE Assay Kit | qPCR assays for optimizing amount of input DNA and PCR cycling conditions for targeted enrichment of FFPE DNA | 333414 |
| QIAamp® DNA Mini Kit (50) | For 50 DNA preps: 50 QIAamp Mini Spin Columns, QIAGEN Proteinase K, collection tubes (2 mL), reagents and buffers | 51304 |

| Product | Contents | Cat. no. |
|---|---|---|
| QIAamp Circulating Nucleic Acid Kit (50) | For 50 DNA preps: QIAamp Mini Columns, Tube Extenders (20 mL), QIAGEN Proteinase K, carrier RNA, buffers, VacConnectors, and collection tubes (1.5 mL and 2 mL) | 55114 |
| AllPrep DNA/RNA Mini Kit (50) | For 50 minipreps: AllPrep DNA Spin Columns, RNeasy Mini Spin Columns, collection tubes, RNase-free water, and buffers | 80204 |
| AllPrep DNA/RNA FFPE Kit (50) | 50 RNeasy MinElute Spin Columns, 50 QIAamp MinElute Spin Columns, collection tubes, RNase-free reagents, and buffers | 80234 |
| PAXgene Blood DNA Kit (25) | Processing tubes and buffers for 25 preparations | 761133 |
| PAXgene Blood RNA Kit (50) | 50 PAXgene Spin Columns, 50 PAXgene Shredder Spin Columns, processing tubes, RNase-Free DNase I, RNase-free reagents and buffers | Inquire |

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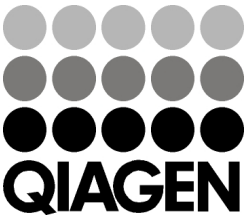


Sample to Insight