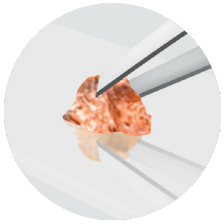
Multiplicom
A part of Agilent Technologies

Tumor Hotspot MASTR Plus

A molecular research assay for the identification of SNVs in 26 frequently mutated genes in solid tumors. This NGS assay is designed with input from selected INCa centers in France.



Research application

For the use of somatic and germline variant detection of selected target regions in 26 frequently mutated genes in:

- FFPE-derived DNA using Illumina MiSeq
- FFT- and blood-derived DNA using Illumina MiSeq

Assay Characteristics

Genes with hotspots included			
AKT	*ERBB2* (HER2)	*IDH1*	*PDGFRA*
ALK	*ERBB4*	*IDH2*	*PIK3R1*
BRAF	*FGFR2*	*KIT*	*PIK3CA*
CDKN2A (p16-INK4A, p14-ARF)	*FGFR3*	*KRAS*	*PTEN* (full gene coverage)
CTNNB1 (β-catenin)	*H3F3A* (Histone H3, F3A)	*MEK1* (MAP2K1)	*STK11* (LKB1) (full gene coverage)
DDR2	*HIST1H3B* (Histone H1, 3B)	*MET*	
EGFR	*HRAS*	*NRAS*	

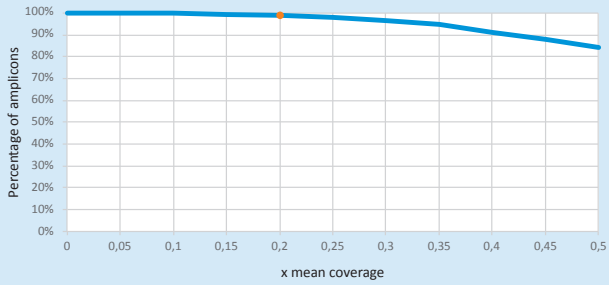
Genomic region analyzed	25.7 kb
Number of amplicons	252
Amplicon length	128-245 bp
Number of plexes	4
Verified with NGS system	MiSeq
Designed to be compatible with	NextSeq, MiniSeq, Ion PGM
Low DNA amount	As low as 4 ng/plex
Complete variant spectrum	SNVs

	Illumina MiSeq reagent kit v2	Illumina MiSeq reagent kit v3
Sequencer capacity Total reads	12,000,000	22,000,000
# samples/run @ 5 % VAF_{sample} 20 reads per allele	17	31
# samples/run @ 50 % VAF_{sample} 20 reads per allele	170	308*

**only 192 MID combinations available*

Performance Parameters

Uniformity of amplification (0.2x mean coverage)	98.8 %
On target read counts	> 97 %

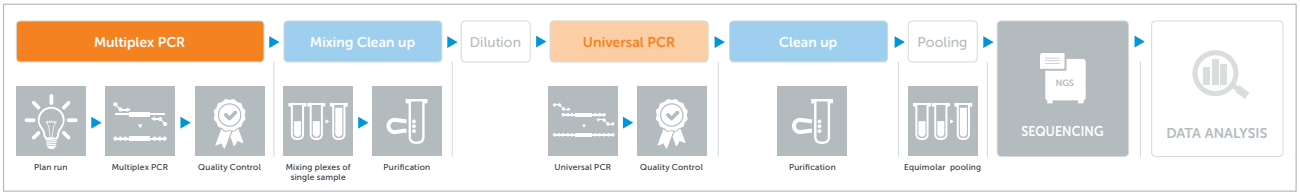


Graph presenting the read counts of Tumor Hotspot MASTR Plus amplicons, showing their uniform representation.

List of genes

Gene	Coverage and included hotspot mutations	Lungs	Colon	Breasts/ ovarians	Skin	Stomach	Blood	Pancreas, thyroid, prostate, glioblastoma, and others
AKT	Exon 4, includes mutations in the PH domain affecting Glu17, Phe35	✔	✔	✔		✔		✔
ALK	Exon 20 to 29, includes mutations in kinase domain affecting Ile1171, Phe1174, Leu1196, Phe1245, Gly1269, Arg1275 and Tyr1278	✔						✔
BRAF	Exon 11 and 15, includes mutations in kinase domain affecting Gly466, Gly469, Asp494, Val600 and Lys601	✔	✔		✔		✔	✔
CDKN2A (p16-INK4A, p14-ARF)	Full exon coverage	✔		✔				✔
CTNNB1 (6-catenin)	Exon 3 includes mutations affecting Asp32, Ser33, Gly34, Ser37, Thr41 and Ser45	✔	✔				✔	✔
DDR2	All coding exons from exon 4 to 19	✔						
EGFR	Exon 18 to 21, spanning the kinase domain that includes mutations affecting Glu709, Gly719, Glu746-Pro753, Ser768 and Leu858	✔	✔	✔		✔		✔
ERBB2 (HER2)	Exon 19 to 21, spanning the kinase domain that includes mutations affecting Leu755, Gly776, Val777 and Val842	✔		✔		✔		✔
ERBB4	Exon 10 and 12	✔				✔		✔
FGFR2	Exon 7, 12 and 14, including mutations affecting Ser252, Asn549 and Lys659			✔	✔	✔		✔
FGFR3	Exon 7, 9, 14 and 16, including mutations affecting Arg248, Ser249, Tyr373 and K650							✔
H3F3A (Histone H3, F3A)	Exon 2, including mutations affecting Lys28							✔
HIST1H3B (HistoneH1, 3B)	Exon 1, including mutations affecting Lys28							✔
HRAS	Exon 2-4, including mutations affecting Gly12, Gly13 and Gln61							✔
IDH1	Exon 4 including mutations affecting Arg132							✔
IDH2	Exon 4 including mutations affecting Arg140 and Arg173							✔
KIT	Exon 8 to 11, 13, 14, 17 and 18, including mutations affecting aa417-419, 557-560, Leu576 and kinase domain mutations				✔	✔	✔	✔
KRAS	Exon 2 to 4, including mutations affecting Gly12 and Gly13	✔	✔					✔
MEK1 (MAP2K1)	Exon 2 to 3, including mutations affecting Lys57 and mutations in Pro124 in the kinase domain	✔			✔			✔
MET	Exon 2, 10, 14 to 20, including mutations Glu168, Thr1010 and the kinase domain including Tyr1253	✔	✔					
NRAS	Exon 2-4, including mutations affecting Gly12, Gly13 and Tyr61	✔			✔			✔
PDGFRA	Exon 12, 14 and 18, including mutations in the kinase domain affecting Asp852					✔	✔	✔
PIK3R1	Exon 11-13, including mutations affecting aa 452 to 464		✔	✔				✔
PIK3CA	Exon 2, 3, 10, 11 and 21, including mutations affecting Glu39, Arg88, Glu542, Glu545 and His1047	✔	✔	✔				✔
PTEN	Full exon coverage	✔	✔	✔		✔		✔
STK11 (LKB1)	Full exon coverage			✔				✔

Workflow



Order info

Cat. No.	Product Name	Samples	Pub Number	PR Number
MR-0200.024	*Tumor Hotspot MASTR Plus*	*24*	*5991-8378ENN*	*PR7000-1403*

MID (Molecular Identifiers) kits are necessary to complete the workflow.

For Research Use Only. Not for use in diagnostic procedures.

v.1708 - EU

Multiplicom N.V. [a] Galileïlaan 18, B-2845 Niel, Belgium [w] www.agilent.com [e] mtp.customerservice@agilent.com [t] +32 3 289 14 00 [f] +32 3 400 23 16