

Tapestri Single-Cell DNA THP Panel

Tumor heterogeneity in solid tumor cancers impacts clonal evolution and patient outcomes. Resolve the genomic diversity in a variety of tumors by targeting hotspots across **59 oncogenes and tumor suppressor genes with 234 amplicons**. Tested with breast, lung, prostate and colorectal nuclei from fresh frozen tissue samples.

Panel Specifications

Metric	Value
Number of genes	59
Number of targets	2,449
Target type possible	SNVs, Indels, CNVs, LOH
Number of amplicons	234
Coverage	90.3%
Panel size	~40 kb
Amplicon length	175 - 275 bp
Panel uniformity: % of amplicons >0.2x mean	>=80%
Amplicon uniformity % of amplicons in >80% of cells	>=80%
Cell uniformity: % of cells with >80% amplicons above 10 reads	>=80%
Verified NGS systems	MiSeq, NextSeq, HiSeq, NovaSeq
Recommended number of reads per sample	~140 M

Table 1: Panel specifications.

59 GENE - TUMOR HOTSPOT PANEL

ABL1	DDR2	GNAI1	KRAS	PTPN11
AKT1	EGFR	GNAQ	MAP2K1	RAF1
ALK	ERBB2	GNAS	MAP2K2	RBI
APC	ERBB3	HNF1A	MET	RET
AR	ERBB4	HRAS	MLH1	SMAD4
ATM	ESR1	IDH1	MPL	SMARCB1
BRAF	EZH2	IDH2	MTOR	SMO
CDH1	FBXW7	JAK1	NOTCH1	SRC
CDK4	FGFR1	JAK2	NRAS	STK11
CDKN2A	FGFR2	JAK3	PDGFRA	TP53
CSF1R	FGFR3	KDR	PIK3CA	VHL
CTNNB1	FLT3	KIT	PTEN	

Table 2: Panel gene targets.

Panel Performance

Metric	Value
Panel uniformity	88.9%
Amplicon uniformity	80.0%
Cell uniformity	82.8%
Cells recovered	3,116
% reads mapped to genome	93.5%
% reads mapped to targets	88.9%
% reads mapped to cells	70.6%

Table 3: Panel performance. Data generated from a cell line mix consisting of 50% Raji cells and 50% KG-1 cells.

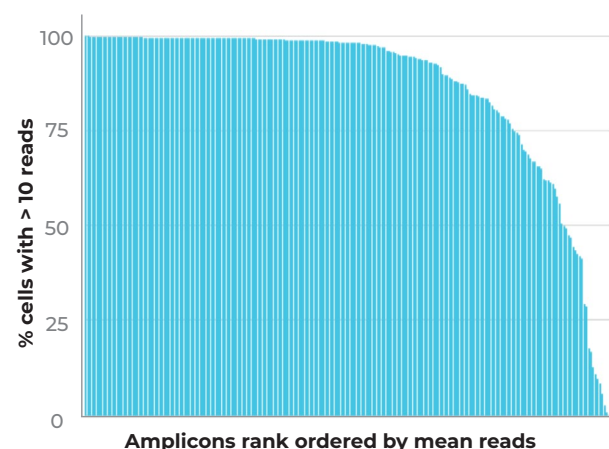


Figure 1: Cell uniformity by amplicon.

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Panel Targets

Gene	Exon	Protein-level Variants	cDNA Variants
ABL	4	M263; H265; K266; L267; G269; G270; Q271; Y272; E274	
	5	D295	
	6	T334; F336; M370; E374	
	7	L403; L406; H415	
AKT1	3	E17; F35; E49	
	6	G159; A177	
	intron		c.47-1G>T
ALK	22	I1171	
	23	F1174; L1196	
APC	16	N869; R876; I880; Q886; Q1096; R1114; G1120; Q1294; E1295; N1300; T1301; Q1303; E1306; I1307; K1308; E1309; E1345; S1346; R1348; K1350; A1351; E1353; S1355; S1356; G1357; P1361; S1364; A1366; Q1367; K1370; P1372; P1373; E1374; H1375; Y1376; Q1378; E1379; Q1429; M1431; P1432; R1435; S1436; T1438; P1439; P1440; P1442; P1443; Q1444; T1445; Q1447; K1449; Q1469; L1488; L1489; H1490; F1491; A1492; T1493; E1494; S1495; P1497; G1499; E1513; K1555; T1556; I1557; L1564; E1577	
AR	8	H875; T878	
ATM	8	R337; C353	
	9	V410	
	12	P604	
	17	E848; F858	
	26	A1309	
	34	I1681; D1682	
	35	A1742	
	36	L1794	
	50	Q2442; R2443	
	54	T2666	
	55	G2695	
	56	D2725	
	59	I2888; L2890	
	61	T2947	
63	R3008; M3011; R3047; G3051		

Gene	Exon	Protein-level Variants	cDNA Variants
BRAF	11	R444; P453; R462; G464; G466; S467; G469; V471; Y472	
	15	N581; I582; F583; L584; H585; E586; D587; L588; T589; V590; K591; I592; G593; D594; F595; G596; L597; A598; T599; V600; K601; R603; W604; S605; G606; H608; Q609	
CDH1	3	V82	
	8	L343; E353; D370	
	9	T399; D400; D402	
	intron		c.1009-1G>A
CDK4	2	K22; R24	
CDKN2A	intron		c.151-2A>C; c.151-4G>C
CSF1R	7	L301	
	22	Y969	
CTNNB1	2	T3	
	3	A13; E15; A20; A21; V22; S23; W25; S29; Y30; L31; D32; S33; G34; I35; H36; S37; G38; A39; T40; T41; T42; A43; P44; S45; L46; S47; G48; K49; G50; E53; E54; E55; V57; D58	
	7	K335	
DDR2	5	R124	
	8	L232	
	15	R668	
	17	S768	
EGFR	2	L62	
	3	R108	
	6	R222	
	7	R252; T263; A289	
	8	H304	
	15	P596; G598	
	17	R677	
	18	A698; N700; A702; L703; E709; T710; E711; F712; K714; I715; K716; V717; L718; G719; S720; G721; G724; T725	

Table 4: Panel content. Exon numbers are curated from UCSC Genome Browser by collapsing the exons in the forward strand by start and stop site and then numbering the exons from 5' -> 3' end with the first exon at 5' end representing Exon 1.

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Panel Targets (cont'd)

Gene	Exon	Protein-level Variants	cDNA Variants
EGFR (cont.)	19	L730; W731; P733; E734; G735; V738; I740; P741; V742; A743; K745; E746; L747; A750; T751; S752; P753; K754; D761	
	20	A767; S768; V769; D770; N771; P772; H773; V774; C775; R776; G779; S784; T785; V786; T790; L792; G796; L798; G810; L814; V819; I821	
	21	R831; L833; V834; H835; R836; L838; A839; N842; V843; T847; P848; H850; V851; T854; D855; G857; L858; A859; K860; L861; L862; G863; A864; E866; E868; H870; A871; G873; G874	
ERBB2	8	G309; S310; E321	
	17	R678	
	18	T733	
	19	L755; S760; P761; I767; D769	
	20	E770; Y772; G776; V777; G778; P780	
	21	V842; H878	
ERBB3	3	M91; V104	
	8	D297	
ERBB4	3	T140	
	4	N181	
	6	T244	
	7	Y285	
	8	S303; C304; R306	
	9	S341; V348	
	12	E452	
	17	F662	
	18	R711	
	23	L933; E934; K935; G936; D931; L932	
ESR1	6	E380; V392	
	8	S463	
	9	P535; L536; Y537; D538	

Gene	Exon	Protein-level Variants	cDNA Variants
EZH2	16	P636; N640; Y646	
FBXW7	5	R278	
	8	R393	
	9	R465L	
	10	R479; V504; R505; D520	
FGFR1	5	S158	
	8	P283S	
FGFR2	7	R251; S252; P253; W290	
	9	S373; Y376; E378; I381; Y382; C383	
	12	N550	
	14	K660	
FGFR3	9	A371; G372; S373; Y375; G382; G384; F385; F386; L387; F388; V391; V392; A393	
	14	D643; V644; H645; N646; L647; D648; Y649; K651; K652	
	16	G699	
	19	L796	
FLT3	11	S451	
	14	Y572; V592; S585; E596; Y599; Q575; K602; W603	
	16	A680	
	20	G831; L832; A833; R834; D835; I836; M837; S838; D839; S840; N841; Y842	
GNAI1	4	V164; G171; R183; P185	
	5	G208; Q209; R210	
GNAQ	4	R183	
	5	Q209	
	6	S268; V289	
	7	R306; D319	
GNAS	9	Q870; K876	
HNFTA	3	R203; W206; G207; Q211	
	4	R272; K273	
HRAS	2	A11; G12; G13; H27	
	3	Q61; E62	

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Panel Targets (cont'd)

Gene	Exon	Protein-level Variants	cDNA Variants
IDH1	4	G70; G105; N116; R119; G123; I130; R132; H133; A134	
	6	V178	
IDH2	4	I139; R140; P158; G171; R172	
JAK1	14	V658	
	16	R724	
JAK2	12	V536; F537; H538; K539; I540; R541; N542; E543; I546	
	13	R564; G571; L579	
	14	L611; V617; C618; D620	
	16	R683	
JAK3	11	S493; Q501	
	13	A572; A573	
	15	R657	
	16	V722	
	intron		c.420+28G>A; c.420+5G>A
KDR	6	A248	
	7	R275	
	11	V476	
	19	G873	
	21	A973; S975; G976; E979; E980; S982; S984	
	26	L1140; D1141; H1144; G1145	
	27	P1210L	
	30	G1304; G1308; G1333; P1355	
KIT	2	R49; G51; D52	
	9	D496; S501 A502; F504; K509	
	10	V530	
	11	K550; P551; M552; Y553; E554; V555; Q556; W557; K558; V559; V560; E561; E562; I563; N564; G565; N566; N567; Y568; V569; Y570; I571; D572; P573; T574; L576; P577; Y578; D579; H580; W582; F584; P585	

Gene	Exon	Protein-level Variants	cDNA Variants
KIT (cont.)	13	H630; S639; K642; V643; L644; S645; L647; G648; N649; M651; I653; V654	
	14	T670	
	15	S715	
	18	A829; E839; W853	
KRAS	2	K5; V8; G10; A11; G12; G13; V14; G15; K16; S17; A18; L19; T20; I21; Q22; I36	
	3	D57; T58; A59; G60; Q61; E63; Y64	
	4	K117; A146	
MAP2K1	2	F53; K57	
	3	C121; P124	
	6	R201; E203	
MAP2K2	2	F57; Q60	
MET	2	E168; N375	
	11	R811; P861; M867	
	14	T1010	
	16	H1112; D1117; N1118; H1124; L1130	
	19	Y1248; Y1253; M1268	
	intron		c.2942-20_2943del
MLH1	12	V384	
MPL	10	S505; A506; W515; A519	
MTOR	30	A1459; L1460; C1483	
	39	E1799	
	40	F1888	
	47	N2206; L2209; A2210; S2215; L2216; R2217	
NOTCH1	27	V1676; L1678	
	34	A2463; S2467	
NRAS	2	A11; G12; G13; G15; K16; S17; A18	
	3	A59; G60; Q61; Y64; S65	
	4	A146	

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Panel Targets (cont'd)

Gene	Exon	Protein-level Variants	cDNA Variants
PDGFRA	12	R554; Y555; R558; W559; R560; V561; I562; E563; S564; I565; S566	
	14	N659	
	15	T674	
	18	V824; R841; D842; I843; M844; D846	
PIK3CA	2	R38; E39; Q75; E80; E81; R88; C90; R93; P104; G106; R108; E109; E110; K111; I112; L113; R115	
	3	G118	
	5	T324; V344; N345; D350	
	6	R357; G364; E365; C378	
	7	S405; C407	
	8	G451; E453; N457; P466	
	10	E525; D538N; P539; L540; S541; E542; I543; T544; E545; Q546; E547; W552	
	14	H701; E726	
	19	C901; F909	
	20	D939	
	21	G1009; S1015; A1020; Y1021; R1023; T1025; D1029; A1035; E1037; F1039; M1040; M1043; N1044; D1045; A1046; H1047; H1048; G1049; G1050	
intron		c.1404+2dupT; c.1404+10T>G	
PTEN	3	F56; L57; S59; K60; H61; N63; Y65; K66; Y68	c.167_209+2del
	5	C105; D107; L108; Q110; W111; L112; D116; H118; A120; A121; I122; H123; C124; K125; A126; G127; K128; G129; R130; T131; G132; V133	
	6	G165; T167; S170; Q171; R172; R173; Y174; Y177; Y178	
	7	Q214; E235; F238; E242; Q245; P246; L247; P248; C250; G251; D252; I253; K254; E256; K260; Q261; K263; K267	
	8	E288; V290; E291; G293; S294; Q298; V317; T319; N323; N329; D331; R335	
	intron		c.165-2A>C; c.165-1G>T; c.209+1G>C; c.209+1_209+2del; c.209+4_209+7del; c.209+5G>A; c.493-12del; c.493-1G>A

Gene	Exon	Protein-level Variants	cDNA Variants	
PTPN11	3	T52; N58; G60; D61; Y62; Y63; D64; E69; K70; F71; A72; T73; L74; E76		
	13	P495; S506; G507; Q514		
RAF1	7	S257		
RBI	4	E137		
	6	L199		
	10	R320		
	11	R358		
	17	R552; E554; H555; R556		
	18	R579		
	20	R661; L676; I680; Q685		
	21	C706; K715		
	22	E748; V754		
	intron		c.940-2A>T; c.2107-2A>G	
RET	10	F612; E615; C618; C620		
	11	L629; C630; D631; E632; C634		
	13	E768		
	15	A883; E884; D898		
	16	R912; M918		
SMAD4	3	A118; C123; R135		
	4	S144		
	5	G168		
	6	Q245; T259		
	8	Q311		
	9	E330; F339; S343; D351; G352; Y353; D355; P356; G358; R361		
	10	G386; Q410; Y412		
	11	R445; Q448; A466		
	12	R496; R497; C499; K507; R515; S517; C523; E526; Q534; D537		
	intron		c.955+5G>C	
	SMARCB1	2	R40; G41; L43; Y47; R53	
		5	N188; P197; R199; R210	
9		R386; A391; P392		
intron			c.1146-41G>A	

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Panel Targets (cont'd)

Gene	Exon	Protein-level Variants	cDNA Variants
SMO	5	A324	
	6	V404; L412	
	9	W535	
	11	T640	
SRC	14	Q531	
STK11	1	T32; Q37; E57; Y60	
	4	Q159; Q170; G171	
	6	F264; Y272; P281; L282	
	8	W332; F354	
TP53	2	E11	
	4	P72; V73; P75; P77; A78; T81; P82; A84; P85; P87; A88; P89; S90; W91; S94; S95; S96; V97; P98; S99; Q100; K101; T102; Y103; Q104; G105; S106; Y107; G108; F109; R110L	
	5	Y126; S127; P128; A129; L130; N131; K132; M133; F134; C135; Q136; P151; P152; P153; G154; T155; R156; V157; R158; A159; M160; A161; I162; Y163; K164; Q165; S166; Q167; H168; M169; T170; E171; V172; V173; R174; R175; C176; P177; H178; H179; E180; R181; C182; S183; D184; S185; D186; G187	c.516_559+2del
	6	A189; P190; P191; Q192; H193; L194; I195; R196; V197; E198; G199; N200; L201; R202; V203; E204; Y205; L206; D207; D208; R209; N210; T211; F212; R213; H214; S215; V216; V217; V218; P219; Y220; E221	
	10	G334; E336; R337; F338; E339; M340; F341; R342; E343; L344; N345; L348; E349; Q354; G356; S366	

Gene	Exon	Protein-level Variants	cDNA Variants
TP53 (cont.)	intron		c.560-1G>A; c.560-2A>G; c.560-3T>C ; c.559+9C>T ; c.559+3G>C; c.559+2T>A; c.559+1G>A; c.376-1G>A; c.376-2A>G; c.376-3C>T; c.376-4A>G; c.376-1G>A; c.376-2A>G; c.376-3C>T; c.376-4A>G; c.376-1G>A; c.376-2A>G; c.376-3C>T; c.376-4A>G
VHL	1	P81; R82; L85; P86; V87; W88; L89; N90; F91; D92; G93; E94; P95; Q96; Y98; P99; L101; G104	
	2	G114; H115; W117; L118; F119; D121; A122; T124; D126; L128; V130; N131; Q132; T133; E134; L135; F136; V137; P138; S139; N141; V142; D143; G144; P146; F148	
	3	V155; Y156; T157; L158; K159; E160; R161; C162; L163; Q164; V165; V166; R167; S168; L169; K171	
	intron		c.341-2A>G; c.341-1G>T; c.464-1G>A

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