qBiomarker Somatic Mutation PCR Array

Human Lung and Colon Cancers (Expanded Panel) 384HT Mutation PCR Array

Cat. no. 337021 SMH-3006ARE

For real-time PCR-based, pathway-focused, somatic mutation profiling

Format	For use with the following real-time cyclers
Format E, with ROX™	Applied Biosystems® models 7900HT (384-well block), ViiA™ 7 (384-well block); Bio-Rad CFX384™
Format G, with ROX	Roche® LightCycler® 480 (384-well block)

QIAGEN®

Sample & Assay Technologies

Description

The Human Lung and Colon Cancer (Expanded Panel) qBiomarker Somatic Mutation PCR Array is a translational research tool that allows rapid, accurate and comprehensive profiling of the recurrent somatic mutations in human lung and colon cancer samples in 29 key genes: AKT1, ALK, APC, ATM, BRAF, CDH1, CDKN2A, CTNNB1, EGFR, ERBB2, EZH2, FBXW7, GATA1, GATA2, GNAS, HRAS, IDH1, IDH2, JAK2, KIT, KRAS, MET, NRAS, PIK3CA, PTEN, RET, SRC, STK11/LKB, and P53. These mutations warrant extensive investigation to enhance the understanding of carcinogenesis and identify potential drug targets. Numerous research studies have demonstrated the utility of individual and multiple somatic mutation status information. For example, the mutation status of the EGFR and KRAS genes can predict the physiological response to certain drugs targeting these molecules. The human Lung and Colon Cancer (Expanded Panel) qBiomarker Somatic Mutation PCR Array, with its comprehensive content coverage, is designed for the study of mutations in the context of lung and colon cancers and has the potential for discovery and verification of drug target biomarkers for these cancer types and other cancer types in which these mutations have been identified. This array includes 353 DNA sequence mutation assays designed to detect recurrent, functionally verified, and biologically significant mutations in human lung and colon cancers. These mutations were chosen from curated, comprehensive somatic mutation databases and peer-reviewed scientific literature, and represent recurring somatic mutations compiled from over 13000 lung cancer and 29000 colon cancer samples. The simplicity of the product format and operating procedure allows routine somatic mutation profiling in any research laboratory with access to real-time PCR instruments.

For further details, consult the *qBiomarker Somatic Mutation PCR Handbook*.

Shipping and storage

qBiomarker Somatic Mutation PCR Arrays are shipped at ambient temperature or on blue ice packs. For long term storage, keep plates at –20°C. Ensure that you have the correct qBiomarker Somatic Mutation PCR Array format for your real-time cycler (see table above). qBiomarker Probe Mastermixes are shipped on blue ice packs. For long term storage, keep qBiomarker Probe Mastermixes at 4°C.

Note: Ensure that you have the correct qBiomarker Probe Mastermix, with the correct reference dye if required, for your instrument.

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

Assay table

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
A01	AKT1	33765	c.49G>A	p.E17K	SMPH017162A
A02	ALK	28498	c.3512T>A	p.I1171N	SMPH000384A
A03	ALK	28491	c.3520T>A	p.F1174I	SMPH000376A
A04	ALK	28057	c.3520T>C	p.F1174L	SMPH000388A
A05	ALK	28054	c.3520T>G	p.F1174V	SMPH000389A
A06	ALK	28059	c.3521T>G	p.F1174C	SMPH000393A
A07	ALK	28055	c.3522C>A	p.F1174L	SMPH000375A
A08	ALK	28495	c.3633C>A	p.T1211T	SMPH000381A
A09	ALK	28499	c.3733T>G	p.F1245V	SMPH000385A
A10	ALK	28500	c.3734T>G	p.F1245C	SMPH000386A
A11	ALK	28056	c.3824G>A	p.R1275Q	SMPH000379A
A12	APC	18852	c.2626C>T	p.R876*	SMPH000580A
A13	APC	13125	c.3340C>T	p.R1114*	SMPH000586A
A14	APC	41617	c.3700_3700delA	p.S1234fs*31	SMPH018165A
A15	APC	18772	c.3856G>T	p.E1286*	SMPH000512A
A16	APC	19072	c.3871C>T	p.Q1291*	SMPH000513A
A17	APC	18960	c.3880C>T	p.Q1294*	SMPH000605A
A18	APC	13728	c.3907C>T	p.Q1303*	SMPH000560A
A19	APC	18760	c.3916G>T	p.E1306*	SMPH000731A
A20	APC	19203	c.3919_3920insA	p.I1307fs*8	SMPH001187A
A21	APC	18950	c.3920_3924delTAAAA	p.I1307fs*6	SMPH000728A
A22	APC	18764	c.3921_3925delAAAAG	p.E1309fs*4	SMPH000606A
A23	APC	13727	c.3922A>T	p.K1308*	SMPH000674A
A24	APC	18775	c.3925G>T	p.E1309*	SMPH000522A
B01	APC	13113	c.3927_3931delAAAGA	p.E1309fs*4	SMPH000523A
B02	APC	18942	c.3928A>T	p.K1310*	SMPH000636A
B03	APC	18817	c.3934G>T	p.G1312*	SMPH000565A
B04	APC	18777	c.3944C>A	p.S1315*	SMPH000783A
B05	APC	18700	c.3956delC	p.P1319fs*2	SMPH000576A
B06	APC	18702	c.3964G>T	p.E1322*	SMPH000685A
B07	APC	18859	c.3982C>T	p.Q1328*	SMPH000626A
B08	APC	13129	c.4012C>T	p.Q1338*	SMPH000527A
B09	APC	27097	c.4016G>C	p.G1339A	SMPH000635A
B10	APC	25814	c.4023T>G	p.S1341R	SMPH000594A
B11	APC	25826	c.4037C>G	p.S1346*	SMPH000607A
B12	APC	19048	c.4057G>T	p.E1353*	SMPH000528A
B13	APC	18779	c.4067C>G	p.S1356*	SMPH000603A
B14	APC	41623	c.4081_4082delCC	p.P1361fs*13	SMPH018172A
B15	APC	13121	c.4099C>T	p.Q1367*	SMPH000702A
B16	APC	19033	c.4110_4111delAA	p.P1372fs*2	SMPH001245A
B17	APC	19696	c.4117delC	p.P1373fs*42	SMPH001080A
B18	APC	41619	c.4118_4118delC	p.P1373fs*42	SMPH018167A
B19	APC	18862	c.4132C>T	p.Q1378*	SMPH000590A
B20	APC	18834	c.4135G>T	p.E1379*	SMPH000530A
B21	APC	18780	c.4192_4193delAG	p.R1399fs*9	SMPH000617A
B22	APC	19051	c.4199delC	p.S1400fs*1	SMPH000693A
B23	APC	19087	c.4216C>T	p.Q1406*	SMPH000690A
B24	APC	19088	c.4219_4220delAG	p.S1407fs*1	SMPH001089A
C01	APC	18822	c.4222G>T	p.E1408*	SMPH000609A
C02	APC	18948	c.4233delT	p.S1411fs*4	SMPH000571A
C03	APC	41631	c.4239_4240insA	p.V1414fs*9	SMPH018168A
C04	APC	18836	c.4285C>T	p.Q1429*	SMPH000549A
C05	APC	18704	c.4312delA	p.T1438fs*35	SMPH000715A
C06	APC	19594	c.4318delC	p.P1440fs*33	SMPH000982A
C07	APC	13127	c.4348C>T	p.R1450*	SMPH000539A
C08	APC	18825	c.4364delA	p.N1455fs*18	SMPH000854A
C09	APC	18873	c.4385_4386delAG	p.S1465fs*3	SMPH000704A
C10	APC	18883	c.4390G>T	p.E1464*	SMPH000931A
C11	APC	18838	c.4391_4394delAGAG	p.E1464fs*8	SMPH000811A
C12	APC	41626	c.4460_4469del10	p.T1487fs*17	SMPH018174A
C13	APC	18999	c.4461delT	p.L1488fs*19	SMPH000851A
C14	APC	41618	c.4463_4466delTATT	p.L1488fs*18	SMPH018166A
C15	APC	19054	c.4473delT	p.F1491fs*16	SMPH000577A
C16	APC	18786	c.4476delC	p.T1493fs*14	SMPH000633A
C17	APC	25817	c.4610C>A	p.T1537K	SMPH000597A
C18	APC	41616	c.4654G>T	p.E1552*	SMPH018164A
C19	APC	19695	c.4660_4661insA	p.T1556fs*3	SMPH001074A
C20	APC	18561	c.4666_4667insA	p.T1556fs*3	SMPH000579A
C21	APC	18978	c.4667_4668insC	p.I1557fs*2	SMPH000670A
C22	APC	13123	c.4729G>T	p.E1577*	SMPH001200A
C23	APC	41620	c.4731_4734delATGT	p.C1578fs*71	SMPH018169A
C24	APC	13134	c.637C>T	p.R213*	SMPH000782A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
D01	APC	19679	c.847C>T	p.R283*	SMPH000551A
D02	APC	13862	c.904C>T	p.R302*	SMPH000669A
D03	ATM	12951	c.7325A>C	p.Q2442P	SMPH001601A
D04	ATM	20404	c.7328G>A	p.R2443Q	SMPH001538A
D05	BRAF	450	c.1391G>T	p.G464V	SMPH001927A
D06	BRAF	451	c.1397G>T	p.G466V	SMPH001870A
D07	BRAF	461	c.1406G>A	p.G469E	SMPH001868A
D08	BRAF	460	c.1406G>C	p.G469A	SMPH001906A
D09	BRAF	470	c.1789C>G	p.L597V	SMPH001869A
D10	BRAF	1130	c.1798G>A	p.V600M	SMPH001846A
D11	BRAF	475	c.1799_1800TG>AA	p.V600E	SMPH001832A
D12	BRAF	476	c.1799T>A	p.V600E	SMPH001828A
D13	BRAF	478	c.1801A>G	p.K601E	SMPH001863A
D14	CDH1	19748	c.1108G>C	p.D370H	SMPH002524A
D15	CDH1	19761	c.1196_1199delCTGA	p.T399fs*17	SMPH002533A
D16	CDH1	28934	c.240_241insGGTG	p.V82fs*13	SMPH002484A
D17	CDH1	19785	c. 786_794CACCCAGGA >T	p.T263fs*3	SMPH002457A
D18	CDKN2A	12743	c.143C>T	p.P48L	SMPH002676A
D19	CDKN2A	13252	c.170C>T	p.A57V	SMPH002670A
D20	CDKN2A	12473	c.172C>T	p.R58*	SMPH002668A
D21	CDKN2A	12475	c.238C>T	p.R80*	SMPH002667A
D22	CDKN2A	12504	c.247C>T	p.H83Y	SMPH002658A
D23	CDKN2A	13299	c.250G>T	p.D84Y	SMPH002831A
D24	CDKN2A	13489	c.322G>T	p.D108Y	SMPH002662A
E01	CDKN2A	12547	c.330G>A	p.W110*	SMPH002718A
E02	CDKN2A	12479	c.358G>T	p.E120*	SMPH002706A
E03	CTNNB1	5686	c.100G>A	p.G34R	SMPH003974A
E04	CTNNB1	5671	c.101G>A	p.G34E	SMPH003960A
E05	CTNNB1	5670	c.101G>T	p.G34V	SMPH003948A
E06	CTNNB1	5687	c.109T>C	p.S37P	SMPH003981A
E07	CTNNB1	5675	c.109T>G	p.S37A	SMPH003985A
E08	CTNNB1	5679	c.110C>G	p.S37C	SMPH003962A
E09	CTNNB1	5662	c.110C>T	p.S37F	SMPH003946A
E10	CTNNB1	5664	c.121A>G	p.T41A	SMPH003950A
E11	CTNNB1	5676	c.122C>T	p.T41I	SMPH003952A
E12	CTNNB1	6128	c.133_135delTCT	p.S45del	SMPH004022A
E13	CTNNB1	5663	c.133T>C	p.S45P	SMPH003970A
E14	CTNNB1	5667	c.134C>T	p.S45F	SMPH003953A
E15	CTNNB1	5733	c.143G>A	p.G48D	SMPH003935A
E16	CTNNB1	5673	c.98C>A	p.S33Y	SMPH003959A
E17	CTNNB1	5677	c.98C>G	p.S33C	SMPH003963A
E18	EGFR	12988	c.2125G>A	p.E709K	SMPH004670A
E19	EGFR	13427	c.2126A>C	p.E709A	SMPH004764A
E20	EGFR	6252	c.2155G>A	p.G719S	SMPH004671A
E21	EGFR	6253	c.2155G>T	p.G719C	SMPH004672A
E22	EGFR	6239	c.2156G>C	p.G719A	SMPH004704A
E23	EGFR	6223	c.2235_2249del15	p.E746_A750del	SMPH004662A
E24	EGFR	6225	c.2236_2250del15	p.E746_A750del	SMPH004663A
F01	EGFR	12728	c.2236_2253del18	p.E746_T751del	SMPH004907A
F02	EGFR	12678	c.2237_2251del15	p.E746_T751>A	SMPH004667A
F03	EGFR	12384	c.2237_2255>T	p.E746_S752>V	SMPH004669A
F04	EGFR	12422	c.2238_2248>GC	p.L747_A750>P	SMPH004768A
F05	EGFR	6220	c.2238_2255del18	p.E746_S752>D	SMPH004905A
F06	EGFR	6218	c.2239_2247del9	p.L747_E749del	SMPH004664A
F07	EGFR	12382	c. 2239_2248TTAAGAGA AG>C	p.L747_A750>P	SMPH004676A
F08	EGFR	12383	c.2239_2251>C	p.L747_T751>P	SMPH004708A
F09	EGFR	6254	c.2239_2253del15	p.L747_T751del	SMPH004697A
F10	EGFR	6255	c.2239_2256del18	p.L747_S752del	SMPH004694A
F11	EGFR	12369	c.2240_2254del15	p.L747_T751del	SMPH004682A
F12	EGFR	12370	c.2240_2257del18	p.L747_P753>S	SMPH004675A
F13	EGFR	6241	c.2303G>T	p.S768I	SMPH004666A
F14	EGFR	12376	c. 2307_2308insGCCAGC GTG	p.V769_D770insASV	SMPH004736A
F15	EGFR	12378	c.2310_2311insGGT	p.D770_N771insG	SMPH004900A
F16	EGFR	12377	c.2319_2320insCAC	p.H773_V774insH	SMPH004899A
F17	EGFR	6240	c.2369C>T	p.T790M	SMPH004665A
F18	EGFR	13424	c.2497T>G	p.L833V	SMPH004751A
F19	EGFR	12366	c.2572C>A	p.L858M	SMPH004880A
F20	EGFR	6224	c.2573T>G	p.L858R	SMPH004661A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
F21	EGFR	6213	c.2582T>A	p.L861Q	SMPH004716A
F22	ERBB2	683	c.2263_2264TT>CC	p.L755P	SMPH005131A
F23	ERBB2	13170	c.2305G>C	p.D769H	SMPH005135A
F24	ERBB2	682	c.2322_2323insGCATACGTGATG	p.M774_A775insAYVM	SMPH005128A
G01	ERBB2	12558	c.2325_2326insTACGTGATGGCT	p.A775_G776insYVMA	SMPH005129A
G02	ERBB2	12553	c.2326_2327insTGT	p.G776>VC	SMPH005156A
G03	ERBB2	14062	c.2329G>T	p.V777L	SMPH005130A
G04	ERBB2	681	c.2335_2336insCTGTGGGCT	p.S779_P780insVGS	SMPH005142A
G05	ERBB2	12556	c.2340_2341insGGCTCCCCA	p.P780_Y781insGSP	SMPH005138A
G06	ERBB2	14065	c.2524G>A	p.V842I	SMPH005151A
G07	EZH2	37031	c.1936T>A	p.Y646N	SMPH022879A
G08	EZH2	37029	c.1937A>C	p.Y646S	SMPH022880A
G09	EZH2	37028	c.1937A>T	p.Y646F	SMPH022878A
G10	FBXW7	22973	c.1177C>T	p.R393*	SMPH005399A
G11	FBXW7	22932	c.1393C>T	p.R465C	SMPH005382A
G12	FBXW7	22965	c.1394G>A	p.R465H	SMPH005386A
G13	FBXW7	22974	c.1436G>A	p.R479Q	SMPH005404A
G14	FBXW7	22975	c.1513C>T	p.R505C	SMPH005417A
G15	FBXW7	22979	c.1745C>T	p.S582L	SMPH005396A
G16	FBXW7	22970	c.670C>T	p.R224*	SMPH005394A
G17	GATA1	13219	c.1_220del220	p.M1fs	SMPH006000A
G18	GATA1	17833	c.220G>A	p.V74I	SMPH005940A
G19	GATA1	13211	c.49C>T	p.Q17*	SMPH005985A
G20	GATA1	13225	c.90_91delAG	p.S30fs*9	SMPH005946A
G21	GATA2	41611	c.1075T>G	p.L359V	SMPH023872A
G22	GNAS	27887	c.601C>T	p.R201C	SMPH006160A
G23	GNAS	27895	c.602G>A	p.R201H	SMPH006159A
G24	HRAS	498	c.182A>T	p.Q61L	SMPH006503A
H01	HRAS	480	c.34G>A	p.G12S	SMPH006499A
H02	HRAS	482	c.34G>C	p.G12R	SMPH006506A
H03	HRAS	481	c.34G>T	p.G12C	SMPH006500A
H04	HRAS	487	c.37G>A	p.G13S	SMPH006515A
H05	IDH1	28747	c.394C>T	p.R132C	SMPH006589A
H06	IDH1	28746	c.395G>A	p.R132H	SMPH006590A
H07	IDH1	28750	c.395G>T	p.R132L	SMPH006593A
H08	IDH2	41590	c.419G>A	p.R140Q	SMPH025021A
H09	IDH2	34039	c.514A>T	p.R172W	SMPH006598A
H10	JAK2	24439	c.1615_1616AA>TT	p.K539L	SMPH006842A
H11	JAK2	27147	c.1620_1629CAGAAATGAA>GAAA	p.I540_E543>MK	SMPH006853A
H12	KIT	1290	c.1727T>C	p.L576P	SMPH007118A
H13	KRAS	550	c.181C>G	p.Q61E	SMPH007606A
H14	KRAS	552	c.182A>G	p.Q61R	SMPH007553A
H15	KRAS	553	c.182A>T	p.Q61L	SMPH007544A
H16	KRAS	554	c.183A>C	p.Q61H	SMPH007540A
H17	KRAS	555	c.183A>T	p.Q61H	SMPH007546A
H18	KRAS	512	c.34_35GG>TT	p.G12F	SMPH007551A
H19	KRAS	517	c.34G>A	p.G12S	SMPH007533A
H20	KRAS	518	c.34G>C	p.G12R	SMPH007534A
H21	KRAS	516	c.34G>T	p.G12C	SMPH007535A
H22	KRAS	521	c.35G>A	p.G12D	SMPH007531A
H23	KRAS	522	c.35G>C	p.G12A	SMPH007536A
H24	KRAS	520	c.35G>T	p.G12V	SMPH007537A
I01	KRAS	528	c.37G>A	p.G13S	SMPH007543A
I02	KRAS	529	c.37G>C	p.G13R	SMPH007549A
I03	KRAS	527	c.37G>T	p.G13C	SMPH007541A
I04	KRAS	531	c.38_39GC>AT	p.G13D	SMPH007589A
I05	KRAS	532	c.38G>A	p.G13D	SMPH007538A
I06	KRAS	533	c.38G>C	p.G13A	SMPH007542A
I07	KRAS	534	c.38G>T	p.G13V	SMPH007545A
I08	KRAS	19404	c.436G>A	p.A146T	SMPH007562A
I09	KRAS	12703	c.57G>C	p.L19F	SMPH007583A
I10	KRAS	543	c.64C>A	p.Q22K	SMPH007565A
I11	MET	29632	c.2942_3082del141	p.L982_D1028del	SMPH008291A
I12	MET	705	c.2962C>T	p.R988C	SMPH008317A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
I13	NRAS	580	c.181C>A	p.Q61K	SMPH010073A
I14	NRAS	584	c.182A>G	p.Q61R	SMPH010069A
I15	NRAS	583	c.182A>T	p.Q61L	SMPH010076A
I16	NRAS	562	c.34G>T	p.G12C	SMPH010078A
I17	NRAS	564	c.35G>A	p.G12D	SMPH010071A
I18	NRAS	566	c.35G>T	p.G12V	SMPH010067A
I19	PIK3CA	754	c.1035T>A	p.N345K	SMPH010733A
I20	PIK3CA	756	c.1132T>C	p.C378R	SMPH010784A
I21	PIK3CA	745	c.113G>A	p.R38H	SMPH010707A
I22	PIK3CA	759	c.1616C>G	p.P539R	SMPH010637A
I23	PIK3CA	760	c.1624G>A	p.E542K	SMPH010629A
I24	PIK3CA	17442	c.1624G>C	p.E542Q	SMPH010715A
J01	PIK3CA	762	c.1625A>T	p.E542V	SMPH010641A
J02	PIK3CA	763	c.1633G>A	p.E545K	SMPH010627A
J03	PIK3CA	27133	c.1633G>C	p.E545Q	SMPH010709A
J04	PIK3CA	764	c.1634A>G	p.E545G	SMPH010633A
J05	PIK3CA	765	c.1635G>T	p.E545D	SMPH010638A
J06	PIK3CA	766	c.1636C>A	p.Q546K	SMPH010628A
J07	PIK3CA	6147	c.1636C>G	p.Q546E	SMPH010708A
J08	PIK3CA	767	c.1637A>C	p.Q546P	SMPH010652A
J09	PIK3CA	12459	c.1637A>G	p.Q546R	SMPH010642A
J10	PIK3CA	25041	c.1637A>T	p.Q546L	SMPH010660A
J11	PIK3CA	778	c.2102A>C	p.H701P	SMPH010774A
J12	PIK3CA	769	c.2702G>T	p.C901F	SMPH010793A
J13	PIK3CA	27493	c.277C>T	p.R93W	SMPH010710A
J14	PIK3CA	12461	c.3062A>G	p.Y1021C	SMPH010682A
J15	PIK3CA	13594	c.3068G>A	p.R1023Q	SMPH010643A
J16	PIK3CA	771	c.3073A>G	p.T1025A	SMPH010686A
J17	PIK3CA	772	c.3074C>A	p.T1025N	SMPH010635A
J18	PIK3CA	17445	c.3104C>T	p.A1035V	SMPH010736A
J19	PIK3CA	12591	c.3127A>G	p.M1043V	SMPH010649A
J20	PIK3CA	773	c.3129G>T	p.M1043I	SMPH010695A
J21	PIK3CA	774	c.3139C>T	p.H1047Y	SMPH010696A
J22	PIK3CA	775	c.3140A>G	p.H1047R	SMPH010630A
J23	PIK3CA	776	c.3140A>T	p.H1047L	SMPH010632A
J24	PIK3CA	777	c.3145G>A	p.G1049S	SMPH010659A
K01	PIK3CA	12597	c.3145G>C	p.G1049R	SMPH010661A
K02	PIK3CA	27158	c.3146G>C	p.G1049A	SMPH010732A
K03	PIK3CA	17447	c.3155C>A	p.T1052K	SMPH010689A
K04	PIK3CA	748	c.317G>T	p.G106V	SMPH010703A
K05	PIK3CA	27497	c.323G>A	p.R108H	SMPH010714A
K06	PIK3CA	13570	c.331A>G	p.K111E	SMPH010757A
K07	PTEN	5154	c.697C>T	p.R233*	SMPH011506A
K08	PTEN	4958	c.955_958delACTT	p.T319fs*1	SMPH011550A
K09	RET	976	c.1991C>A	p.A664D	SMPH012939A
K10	SRC	1369	c.1591C>T	p.Q531*	SMPH014190A
K11	STK11	21360	c.1062C>G	p.F354L	SMPH014253A
K12	STK11	12925	c.109C>T	p.Q37*	SMPH014255A
K13	STK11	21212	c.169delG	p.E57fs*7	SMPH014332A
K14	STK11	27322	c.180delC	p.Y60fs*1	SMPH014282A
K15	STK11	20943	c.508C>T	p.Q170*	SMPH014238A
K16	STK11	21354	c.511G>A	p.G171S	SMPH014252A
K17	STK11	20944	c.580G>T	p.D194Y	SMPH014239A
K18	STK11	29005	c.816C>T	p.Y272Y	SMPH014348A
K19	STK11	21355	c.842C>T	p.P281L	SMPH014254A
K20	STK11	12924	c.842delC	p.P281fs*6	SMPH014248A
K21	STK11	18652	c.996G>A	p.W332*	SMPH014333A
K22	TP53	11073	c.1024C>T	p.R342*	SMPH015065A
K23	TP53	11582	c.395A>G	p.K132R	SMPH015094A
K24	TP53	43963	c.396G>C	p.K132N	SMPH035134A
L01	TP53	10801	c.404G>A	p.C135Y	SMPH015154A
L02	TP53	10647	c.404G>T	p.C135F	SMPH014911A
L03	TP53	43708	c.422G>A	p.C141Y	SMPH034537A
L04	TP53	11245	c.430C>T	p.Q144*	SMPH014994A
L05	TP53	43609	c.437G>A	p.W146*	SMPH034567A
L06	TP53	10727	c.438G>A	p.W146*	SMPH015140A
L07	TP53	10905	c.451C>T	p.P151S	SMPH015043A
L08	TP53	11476	c.452C>A	p.P151H	SMPH014969A
L09	TP53	10790	c.455C>T	p.P152L	SMPH014958A
L10	TP53	6815	c.461G>T	p.G154V	SMPH015134A
L11	TP53	10760	c.467G>C	p.R156P	SMPH015042A
L12	TP53	10670	c.469G>T	p.V157F	SMPH014984A
L13	TP53	10690	c.473G>A	p.R158H	SMPH014957A
L14	TP53	10714	c.473G>T	p.R158L	SMPH015138A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
L15	TP53	11148	c.476C>T	p.A159V	SMPH014972A
L16	TP53	10739	c.481G>A	p.A161T	SMPH015187A
L17	TP53	10808	c.488A>G	p.Y163C	SMPH014931A
L18	TP53	11084	c.517G>A	p.V173M	SMPH015105A
L19	TP53	43559	c.517G>T	p.V173L	SMPH034455A
L20	TP53	10648	c.524G>A	p.R175H	SMPH014921A
L21	TP53	10687	c.527G>A	p.C176Y	SMPH015119A
L22	TP53	10645	c.527G>T	p.C176F	SMPH014960A
L23	TP53	10768	c.535C>T	p.H179Y	SMPH015208A
L24	TP53	10889	c.536A>G	p.H179R	SMPH015072A
M01	TP53	43635	c.536A>T	p.H179L	SMPH034554A
M02	TP53	10733	c.574C>T	p.Q192*	SMPH015161A
M03	TP53	10672	c.577C>T	p.H193Y	SMPH015192A
M04	TP53	10742	c.578A>G	p.H193R	SMPH014975A
M05	TP53	44571	c.581T>G	p.L194R	SMPH034553A
M06	TP53	11089	c.584T>C	p.I195T	SMPH015069A
M07	TP53	10705	c.586C>T	p.R196*	SMPH014949A
M08	TP53	43947	c.614A>G	p.Y205C	SMPH034421A
M09	TP53	6482	c.625_626delAG	p.R209fs*6	SMPH015175A
M10	TP53	10654	c.637C>T	p.R213*	SMPH014928A
M11	TP53	43650	c.638G>T	p.R213L	SMPH034475A
M12	TP53	43687	c.641A>G	p.H214R	SMPH034420A
M13	TP53	10667	c.646G>A	p.V216M	SMPH015006A
M14	TP53	10758	c.659A>G	p.Y220C	SMPH014964A
M15	TP53	10725	c.701A>G	p.Y234C	SMPH014944A
M16	TP53	10731	c.707A>G	p.Y236C	SMPH015023A
M17	TP53	10834	c.711G>A	p.M237I	SMPH015199A
M18	TP53	11063	c.711G>T	p.M237I	SMPH014988A
M19	TP53	11059	c.713G>A	p.C238Y	SMPH015089A
M20	TP53	43778	c.713G>T	p.C238F	SMPH034467A
M21	TP53	10777	c.715A>G	p.N239D	SMPH015188A
M22	TP53	10709	c.722C>G	p.S241C	SMPH014933A
M23	TP53	10812	c.722C>T	p.S241F	SMPH014924A
M24	TP53	10646	c.725G>A	p.C242Y	SMPH015220A
N01	TP53	10810	c.725G>T	p.C242F	SMPH015002A
N02	TP53	10941	c.730G>A	p.G244S	SMPH015100A
N03	TP53	11524	c.730G>T	p.G244C	SMPH015087A
N04	TP53	10883	c.731G>A	p.G244D	SMPH015004A
N05	TP53	6932	c.733G>A	p.G245S	SMPH014940A
N06	TP53	11081	c.733G>T	p.G245C	SMPH014979A
N07	TP53	43606	c.734G>A	p.G245D	SMPH034441A
N08	TP53	11196	c.734G>T	p.G245V	SMPH014986A
N09	TP53	43555	c.736A>G	p.M246V	SMPH034425A
N10	TP53	10656	c.742C>T	p.R248W	SMPH014929A
N11	TP53	10662	c.743G>A	p.R248Q	SMPH014902A
N12	TP53	6549	c.743G>T	p.R248L	SMPH015015A
N13	TP53	10668	c.745A>G	p.R249G	SMPH014912A
N14	TP53	43629	c.745A>T	p.R249W	SMPH034698A
N15	TP53	43871	c.746G>T	p.R249M	SMPH034767A
N16	TP53	10817	c.747G>T	p.R249S	SMPH015066A
N17	TP53	10771	c.749C>T	p.P250L	SMPH015046A
N18	TP53	10988	c.772G>A	p.E258K	SMPH015102A
N19	TP53	10794	c.796G>A	p.G266R	SMPH015215A
N20	TP53	10867	c.797G>A	p.G266E	SMPH015003A
N21	TP53	10958	c.797G>T	p.G266V	SMPH014997A
N22	TP53	10891	c.814G>A	p.V272M	SMPH014987A
N23	TP53	10659	c.817C>T	p.R273C	SMPH014907A
N24	TP53	10660	c.818G>A	p.R273H	SMPH014913A
O01	TP53	43896	c.818G>C	p.R273P	SMPH034456A
O02	TP53	10779	c.818G>T	p.R273L	SMPH015005A
O03	TP53	10893	c.824G>A	p.C275Y	SMPH015022A
O04	TP53	10701	c.824G>T	p.C275F	SMPH014991A
O05	TP53	10939	c.832C>T	p.P278S	SMPH014915A
O06	TP53	10887	c.833C>G	p.P278R	SMPH015178A
O07	TP53	10863	c.833C>T	p.P278L	SMPH015086A
O08	TP53	43714	c.836G>A	p.G279E	SMPH034710A
O09	TP53	10728	c.839G>A	p.R280K	SMPH015091A
O10	TP53	10724	c.839G>C	p.R280T	SMPH014901A
O11	TP53	10992	c.844C>G	p.R282G	SMPH015139A
O12	TP53	10704	c.844C>T	p.R282W	SMPH014941A
O13	TP53	10722	c.853G>A	p.E285K	SMPH014937A
O14	TP53	10726	c.856G>A	p.E286K	SMPH015084A
O15	TP53	10856	c.880G>T	p.E294*	SMPH015028A
O16	TP53	10710	c.892G>T	p.E298*	SMPH015116A

Position	Gene	COSMIC ID	Nucleotide Change	Amino Acid Change	Assay Catalog #
O17	TP53	11066	c.578A>T	p.H193L	SMPH014968A
O18	AKT1	99000005	copy number	copy number	SMPH017167A
O19	ALK	99000047	copy number	copy number	SMPH017209A
O20	APC	99000030	copy number	copy number	SMPH017192A
O21	ATM	99000031	copy number	copy number	SMPH017193A
O22	BRAF	99000006	copy number	copy number	SMPH017168A
O23	CDH1	99000048	copy number	copy number	SMPH017210A
O24	CDKN2A	99000032	copy number	copy number	SMPH017194A
P01	CTNNB1	99000042	copy number	copy number	SMPH017204A
P02	EGFR	99000007	copy number	copy number	SMPH017169A
P03	ERBB2	99000016	copy number	copy number	SMPH017178A
P04	EZH2	99000067	copy number	copy number	SMPH017229A
P05	FBXW7	99000063	copy number	copy number	SMPH017225A
P06	GATA1	99000043	copy number	copy number	SMPH017205A
P07	GATA2	99000068	copy number	copy number	SMPH017230A
P08	GNAS	99000039	copy number	copy number	SMPH017201A
P09	HRAS	99000009	copy number	copy number	SMPH017171A
P10	IDH1	99000056	copy number	copy number	SMPH017218A
P11	IDH2	99000045	copy number	copy number	SMPH017207A
P12	JAK2	99000025	copy number	copy number	SMPH017187A
P13	KIT	99000021	copy number	copy number	SMPH017183A
P14	KRAS	99000008	copy number	copy number	SMPH017170A
P15	MET	99000022	copy number	copy number	SMPH017184A
P16	NRAS	99000010	copy number	copy number	SMPH017172A
P17	PIK3CA	99000012	copy number	copy number	SMPH017174A
P18	PTEN	99000013	copy number	copy number	SMPH017175A
P19	RET	99000060	copy number	copy number	SMPH017222A
P20	SRC	99000071	copy number	copy number	SMPH038607A
P21	STK11	99000038	copy number	copy number	SMPH017200A
P22	TP53	99000041	copy number	copy number	SMPH017203A
P23	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A
P24	SMPC	99000017	positive PCR control	positive PCR control	SMPH017179A

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