MAYO CLINIC LABORATORIES

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel

Next-generation sequencing (NGS) is performed to test for the presence of microsatellite instability, single nucleotide variations, deletions, and insertions in coding regions and intron/exon boundaries of the genes listed. When appropriate, alterations detected are confirmed by an independent reference method, such as Sanger sequencing. Default reportable range offset is +/-2 base pairs around each targeted exon region.

As a result of technical limitations of the assay (including regions of homology, high GC content, and repetitive sequences), there are regions of some genes that cannot be effectively evaluated. Refer to gene regions table below for complete gene coverage information. To verify if a specific region/exon/variant is covered by this assay, contact the laboratory at 800-533-1710.

Genomic Build: GRCh37 (hg19) unless otherwise specified

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
APC	Ex2	chr5	112090586	112090724	NM_000038
APC	Ex3	chr5	112102021	112102109	NM_000038
APC	Ex4	chr5	112102884	112103089	NM_000038
APC	Ex5	chr5	112111324	112111436	NM_000038
APC	Ex6	chr5	112116485	112116602	NM_000038
APC	Ex7	chr5	112128141	112128228	NM_000038
APC	Ex8	chr5	112136974	112137082	NM_000038
APC	Ex9	chr5	112151190	112151292	NM_000038
APC	Ex10	chr5	112154661	112155043	NM_000038
APC	Ex11	chr5	112157591	112157690	NM_000038
APC	Ex12	chr5	112162803	112162946	NM_000038
APC	Ex13	chr5	112163624	112163705	NM_000038
APC	Ex14	chr5	112164551	112164671	NM_000038
APC	Ex15	chr5	112170646	112170864	NM_000038
APC	Ex16	chr5	112173248	112179825	NM_000038
BRAF	Ex1	chr7	140624364	140624505	NM_004333
BRAF	Ex2	chr7	140549909	140550014	NM_004333
BRAF	Ex3	chr7	140534407	140534674	NM_004333
BRAF	Ex4	chr7	140508690	140508797	NM_004333
BRAF	Ex5	chr7	140507758	140507864	NM_004333
BRAF	Ex6	chr7	140501210	140501362	NM_004333
BRAF	Ex7	chr7	140500160	140500283	NM_004333
BRAF	Ex8	chr7	140494106	140494269	NM_004333
BRAF	Ex9	chr7	140487346	140487386	NM_004333
BRAF	Ex10	chr7	140482819	140482959	NM_004333
BRAF	Ex11	chr7	140481374	140481495	NM_004333
BRAF	Ex12	chr7	140477789	140477877	NM_004333
BRAF	Ex13	chr7	140476710	140476890	NM_004333
BRAF	Ex14	chr7	140453985	140454035	NM_004333

©2025Mayo Foundation for Medical Education and Research

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel (continued)

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
BRAF	Ex15	chr7	140453073	140453195	NM_004333
BRAF	Ex16	chr7	140449085	140449220	NM_004333
BRAF	Ex17	chr7	140439610	140439748	NM_004333
BRAF	Ex18	chr7	140434395	140434572	NM_004333
HRAS	Ex2	chr11	534210	534324	NM_001130442
HRAS	Ex3	chr11	533764	533946	NM_001130442
HRAS	Ex4	chr11	533451	533614	NM_001130442
HRAS	Ex5	chr11	532634	532757	NM_001130442
KIT	Ex1	chr4	55524180	55524250	NM_000222
KIT	Ex2	chr4	55561676	55561949	NM_000222
KIT	Ex3	chr4	55564448	55564733	NM_000222
KIT	Ex4	chr4	55565794	55565934	NM_000222
KIT	Ex5	chr4	55569888	55570060	NM_000222
KIT	Ex6	chr4	55573262	55573455	NM_000222
KIT	Ex7	chr4	55575588	55575707	NM_000222
KIT	Ex8	chr4	55589748	55589866	NM_000222
KIT	Ex9	chr4	55592021	55592218	NM_000222
KIT	Ex10	chr4	55593382	55593492	NM_000222
KIT	Ex11	chr4	55593580	55593710	NM_000222
KIT	Ex12	chr4	55593987	55594095	NM_000222
KIT	Ex13	chr4	55594175	55594289	NM_000222
KIT	Ex14	chr4	55595499	55595653	NM_000222
KIT	Ex15	chr4	55597492	55597587	NM_000222
KIT	Ex16	chr4	55598035	55598166	NM_000222
KIT	Ex17	chr4	55599234	55599360	NM_000222
KIT	Ex18	chr4	55602662	55602777	NM_000222
KIT	Ex19	chr4	55602885	55602988	NM_000222
KIT	Ex20	chr4	55603339	55603448	NM_000222
KIT	Ex21	chr4	55604593	55604725	NM_000222
KRAS	Ex2	chr12	25398206	25398320	NM_033360
KRAS	Ex3	chr12	25380166	25380348	NM_033360
KRAS	Ex4	chr12	25378546	25378709	NM_033360
KRAS	Ex5	chr12	25368373	25368496	NM_033360
NF1	Ex1	chr17	29422326	29422389	NM_001042492
NF1	Ex2	chr17	29482999	29483146	NM_001042492
NF1	Ex3	chr17	29486026	29486113	NM_001042492
NF1	Ex4	chr17	29490202	29490396	NM_001042492
NF1	Ex5	chr17	29496907	29497017	NM_001042492

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel (continued)

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
NF1	Ex6	chr17	29508438	29508509	NM_001042492
NF1	Ex7	chr17	29508726	29508805	NM_001042492
NF1	Ex8	chr17	29509524	29509685	NM_001042492
NF1	Ex9	chr17	29527438	29527615	NM_001042492
NF1	Ex10	chr17	29528053	29528179	NM_001042492
NF1	Ex11	chr17	29528427	29528505	NM_001042492
NF1	Ex12	chr17	29533256	29533391	NM_001042492
NF1	Ex13	chr17	29541467	29541605	NM_001042492
NF1	Ex14	chr17	29546021	29546138	NM_001042492
NF1	Ex15	chr17	29548866	29548949	NM_001042492
NF1	Ex16	chr17	29550460	29550587	NM_001042492
NF1	Ex17	chr17	29552111	29552270	NM_001042492
NF1	Ex18	chr17	29553451	29553704	NM_001042492
NF1	Ex19	chr17	29554234	29554311	NM_001042492
NF1	Ex20	chr17	29554539	29554626	NM_001042492
NF1	Ex21	chr17	29556041	29556485	NM_001042492
NF1	Ex22	chr17	29556851	29556994	NM_001042492
NF1	Ex23	chr17	29557276	29557402	NM_001042492
NF1	Ex24	chr17	29557858	29557945	NM_001042492
NF1	Ex25	chr17	29559089	29559209	NM_001042492
NF1	Ex26	chr17	29559716	29559901	NM_001042492
NF1	Ex27	chr17	29560018	29560233	NM_001042492
NF1	Ex28	chr17	29562627	29562792	NM_001042492
NF1	Ex29	chr17	29562934	29563041	NM_001042492
NF1	Ex30	chr17	29576000	29576139	NM_001042492
NF1	Ex31	chr17	29579954	29580020	NM_001042492
NF1	Ex32	chr17	29585360	29585522	NM_001042492
NF1	Ex33	chr17	29586048	29586149	NM_001042492
NF1	Ex34	chr17	29587385	29587535	NM_001042492
NF1	Ex35	chr17	29588727	29588877	NM_001042492
NF1	Ex36	chr17	29592245	29592359	NM_001042492
NF1	Ex37	chr17	29652836	29653272	NM_001042492
NF1	Ex38	chr17	29654515	29654859	NM_001042492
NF1	Ex39	chr17	29657312	29657518	NM_001042492
NF1	Ex40	chr17	29661854	29662051	NM_001042492
NF1	Ex41	chr17	29663349	29663493	NM_001042492
NF1	Ex42	chr17	29663651	29663934	NM_001042492
NF1	Ex43	chr17	29664384	29664602	NM_001042492

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel (continued)

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
NF1	Ex44	chr17	29664835	29664900	NM_001042492
NF1	Ex45	chr17	29665041	29665159	NM_001042492
NF1	Ex46	chr17	29665720	29665825	NM_001042492
NF1	Ex47	chr17	29667521	29667665	NM_001042492
NF1	Ex48	chr17	29670025	29670155	NM_001042492
NF1	Ex49	chr17	29676136	29676271	NM_001042492
NF1	Ex50	chr17	29677199	29677338	NM_001042492
NF1	Ex51	chr17	29679273	29679434	NM_001042492
NF1	Ex52	chr17	29683476	29683602	NM_001042492
NF1	Ex53	chr17	29683976	29684110	NM_001042492
NF1	Ex54	chr17	29684285	29684389	NM_001042492
NF1	Ex55	chr17	29685496	29685642	NM_001042492
NF1	Ex56	chr17	29685985	29686035	NM_001042492
NF1	Ex57	chr17	29687503	29687723	NM_001042492
NF1	Ex58	chr17	29701029	29701175	NM_001042492
NRAS	Ex2	chr1	115258669	115258783	NM_002524
NRAS	Ex3	chr1	115256419	115256601	NM_002524
NRAS	Ex4	chr1	115252188	115252351	NM_002524
NRAS	Ex5	chr1	115251154	115251277	NM_002524
PDGFRA	Ex2	chr4	55124934	55124986	NM_006206
PDGFRA	Ex3	chr4	55127260	55127581	NM_006206
PDGFRA	Ex4	chr4	55129832	55130096	NM_006206
PDGFRA	Ex5	chr4	55131084	55131218	NM_006206
PDGFRA	Ex6	chr4	55133454	55133629	NM_006206
PDGFRA	Ex7	chr4	55133717	55133910	NM_006206
PDGFRA	Ex8	chr4	55136798	55136917	NM_006206
PDGFRA	Ex9	chr4	55138559	55138689	NM_006206
PDGFRA	Ex10	chr4	55139702	55139899	NM_006206
PDGFRA	Ex11	chr4	55140696	55140794	NM_006206
PDGFRA	Ex12	chr4	55141006	55141142	NM_006206
PDGFRA	Ex13	chr4	55143553	55143661	NM_006206
PDGFRA	Ex14	chr4	55144061	55144175	NM_006206
PDGFRA	Ex15	chr4	55144527	55144684	NM_006206
PDGFRA	Ex16	chr4	55146481	55146651	NM_006206
PDGFRA	Ex17	chr4	55151536	55151655	NM_006206
PDGFRA	Ex18	chr4	55152006	55152132	NM_006206
PDGFRA	Ex19	chr4	55153595	55153710	NM_006206
PDGFRA	Ex20	chr4	55154964	55155067	NM_006206

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel (continued)

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
PDGFRA	Ex21	chr4	55155174	55155283	NM_006206
PDGFRA	Ex22	chr4	55156478	55156723	NM_006206
PDGFRA	Ex23	chr4	55161290	55161441	NM_006206
PIK3CA	Ex2	chr3	178916612	178916967	NM_006218
PIK3CA	Ex3	chr3	178917476	178917689	NM_006218
PIK3CA	Ex4	chr3	178919076	178919330	NM_006218
PIK3CA	Ex5	chr3	178921330	178921579	NM_006218
PIK3CA	Ex6	chr3	178922289	178922378	NM_006218
PIK3CA	Ex7	chr3	178927381	178927490	NM_006218
PIK3CA	Ex8	chr3	178927972	178928128	NM_006218
PIK3CA	Ex9	chr3	178928217	178928355	NM_006218
PIK3CA	Ex10	chr3	178935996	178936124	NM_006218
PIK3CA	Ex11	chr3	178936982	178937067	NM_006218
PIK3CA	Ex12	chr3	178937357	178937525	NM_006218
PIK3CA	Ex13	chr3	178937735	178937842	NM_006218
PIK3CA	Ex14	chr3	178938772	178938947	NM_006218
PIK3CA	Ex15	chr3	178941867	178941977	NM_006218
PIK3CA	Ex16	chr3	178942486	178942611	NM_006218
PIK3CA	Ex17	chr3	178943748	178943830	NM_006218
PIK3CA	Ex18	chr3	178947058	178947232	NM_006218
PIK3CA	Ex19	chr3	178947790	178947911	NM_006218
PIK3CA	Ex20	chr3	178948011	178948166	NM_006218
PIK3CA	Ex21	chr3	178951880	178952154	NM_006218
SETD2	Ex1	chr3	47205342	47205416	NM_014159
SETD2	Ex2	chr3	47168136	47168155	NM_014159
SETD2	Ex3	chr3	47161670	47166040	NM_014159
SETD2	Ex4	chr3	47158111	47158246	NM_014159
SETD2	Ex5	chr3	47155364	47155496	NM_014159
SETD2	Ex6	chr3	47147485	47147612	NM_014159
SETD2	Ex7	chr3	47144834	47144915	NM_014159
SETD2	Ex8	chr3	47142946	47143047	NM_014159
SETD2	Ex9	chr3	47139443	47139573	NM_014159
SETD2	Ex10	chr3	47129601	47129739	NM_014159
SETD2	Ex11	chr3	47127683	47127806	NM_014159
SETD2	Ex12	chr3	47125208	47125874	NM_014159
SETD2	Ex13	chr3	47108558	47108610	NM_014159
SETD2	Ex14	chr3	47103651	47103838	NM_014159
SETD2	Ex15	chr3	47098309	47098982	NM_014159

Targeted Genes and Methodology Details for MayoComplete Gastrointestinal Stromal Tumor Panel (continued)

Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
SETD2	Ex16	chr3	47087975	47088113	NM_014159
SETD2	Ex17	chr3	47084049	47084192	NM_014159
SETD2	Ex18	chr3	47079154	47079269	NM_014159
SETD2	Ex19	chr3	47061248	47061332	NM_014159
SETD2	Ex20	chr3	47059126	47059231	NM_014159
SETD2	Ex21	chr3	47058581	47058746	NM_014159
TP53	Ex2	chr17	7579837	7579914	NM_000546
TP53	Ex3	chr17	7579698	7579723	NM_000546
TP53	Ex4	chr17	7579310	7579592	NM_000546
TP53	Ex5	chr17	7578369	7578556	NM_000546
TP53	Ex6	chr17	7578175	7578291	NM_000546
TP53	Ex7	chr17	7577497	7577610	NM_000546
TP53	Ex8	chr17	7577017	7577157	NM_000546
TP53	Ex9	chr17	7576851	7576928	NM_000546
TP53	Ex10	chr17	7573925	7574035	NM_000546
TP53	Ex11	chr17	7572925	7573010	NM_000546