MAYO CLINIC LABORATORIES

Targeted Genes and Methodology Details for MayoComplete Colorectal Cancer 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.

Genomic Build: GRCh37 (hg19) unless otherwise specified

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.

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
BRAF	Ex15	chr7	140453073	140453195	NM_004333
BRAF	Ex16	chr7	140449085	140449220	NM_004333

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Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
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
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
MLH1	Ex1	chr3	37035037	37035156	NM_000249
MLH1	Ex2	chr3	37038108	37038202	NM_000249
MLH1	Ex3	chr3	37042444	37042546	NM_000249
MLH1	Ex4	chr3	37045890	37045967	NM_000249
MLH1	Ex5	chr3	37048480	37048556	NM_000249
MLH1	Ex6	chr3	37050303	37050398	NM_000249
MLH1	Ex7	chr3	37053309	37053355	NM_000249
MLH1	Ex8	chr3	37053500	37053592	NM_000249
MLH1	Ex9	chr3	37055921	37056037	NM_000249
MLH1	Ex10	chr3	37058995	37059092	NM_000249
MLH1	Ex11	chr3	37061799	37061956	NM_000249
MLH1	Ex12	chr3	37067126	37067500	NM_000249
MLH1	Ex13	chr3	37070273	37070425	NM_000249
MLH1	Ex14	chr3	37081675	37081787	NM_000249
MLH1	Ex15	chr3	37083757	37083824	NM_000249
MLH1	Ex16	chr3	37089008	37089176	NM_000249
MLH1	Ex17	chr3	37090006	37090102	NM_000249
MLH1	Ex18	chr3	37090393	37090510	NM_000249
MLH1	Ex19	chr3	37091975	37092146	NM_000249
MSH2	Ex1	chr2	47630329	47630543	NM_000251
MSH2	Ex2	chr2	47635538	47635696	NM_000251
MSH2	Ex3	chr2	47637231	47637513	NM_000251
MSH2	Ex4	chr2	47639551	47639701	NM_000251
MSH2	Ex5	chr2	47641406	47641559	NM_000251
MSH2	Ex6	chr2	47643433	47643570	NM_000251
MSH2	Ex7	chr2	47656879	47657082	NM_000251
MSH2	Ex8	chr2	47672685	47672798	NM_000251
MSH2	Ex9	chr2	47690168	47690295	NM_000251
MSH2	Ex10	chr2	47693795	47693949	NM_000251

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Gene	Exon	Chromosome	Genomic Start	Genomic Stop	Reference Transcript
MSH2	Ex11	chr2	47698102	47698203	NM_000251
MSH2	Ex12	chr2	47702162	47702411	NM_000251
MSH2	Ex13	chr2	47703504	47703712	NM_000251
MSH2	Ex14	chr2	47705409	47705660	NM_000251
MSH2	Ex15	chr2	47707833	47708012	NM_000251
MSH2	Ex16	chr2	47709916	47710090	NM_000251
MSH6	Ex1	chr2	48010371	48010634	NM_000179
MSH6	Ex2	chr2	48018064	48018264	NM_000179
MSH6	Ex3	chr2	48023031	48023204	NM_000179
MSH6	Ex4	chr2	48025748	48028296	NM_000179
MSH6	Ex5	chr2	48030557	48030826	NM_000179
MSH6	Ex6	chr2	48032047	48032168	NM_000179
MSH6	Ex7	chr2	48032755	48032848	NM_000179
MSH6	Ex8	chr2	48033341	48033499	NM_000179
MSH6	Ex9	chr2	48033589	48033792	NM_000179
MSH6	Ex10	chr2	48033916	48034001	NM_000179
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
PMS2	Ex1	chr7	6048626	6048652	NM_000535
PMS2	Ex2	chr7	6045521	6045664	NM_000535
PMS2	Ex3	chr7	6043601	6043691	NM_000535
PMS2	Ex4	chr7	6043319	6043425	NM_000535
PMS2	Ex5	chr7	6042082	6042269	NM_000535
PMS2	Ex6	chr7	6038737	6038908	NM_000535
PMS2	Ex7	chr7	6036955	6037056	NM_000535
PMS2	Ex8	chr7	6035163	6035266	NM_000535
PMS2	Ex9	chr7	6031602	6031690	NM_000535
PMS2	Ex10	chr7	6029429	6029588	NM_000535
PMS2	Ex11	chr7	6026388	6027253	NM_000535
PMS2	Ex12	chr7	6022453	6022624	NM_000535
PMS2	Ex13	chr7	6018225	6018329	NM_000535
PMS2	Ex14	chr7	6017217	6017390	NM_000535
PMS2	Ex15	chr7	6013028	6013175	NM_000535