

## Hereditary Cancer Panels

### Key Features:

- Includes sequencing and CNV analyses
- 100% coverage of targeted regions at >50x
- Sensitivity and specificity >99%
- Rigorous classification adhering to ACMG guidelines
- Multiple panel options available

Panel	Genes
<b>BRCA1, BRCA2 panel*</b>	BRCA1, BRCA2
<b>Breast Cancer panel**</b>	ATM, BRCA1, BRCA2, CDH1, CHEK2, NBN, NF1, PALB2, PTEN, STK11, TP53
<b>Breast and Gynecologic Cancer panel**</b>	ATM, BRCA1, BRCA2, BRIP1, CDH1, CHEK2, EPCAM, MLH1, MSH2, MSH6, NBN, NF1, PALB2, PMS2, PTEN, RAD51C, RAD51D, STK11, TP53
<b>Colorectal Cancer panel**</b>	APC, AXIN2, BMPR1A, CHEK2, EPCAM, GREM1, MLH1, MSH2, MSH3, MSH6, MUTYH, NTHL1, PMS2, POLD1, POLE, PTEN, SMAD4, STK11, TP53
<b>Hereditary Cancer panel**</b>	APC, ATM, AXIN2, BARD1, BMPR1A, BRCA1, BRCA2, BRIP1, CDH1, CDK4, CDKN2A, CHEK2, CTNNA1, DICER1, EPCAM, GREM1, HOXB13, KIT, MEN1, MLH1, MSH2, MSH3, MSH6, MUTYH, NBN, NF1, NTHL1, PALB2, PDGFRA, PMS2, POLD1, POLE, PTEN, RAD50, RAD51C, RAD51D, SDHA, SDHB, SDHC, SDHD, SMAD4, SMARCA4, STK11, TP53, TSC1, TSC2, VHL

\*\$600 CAD, with genetic counselling | \*\* \$729 CAD, with genetic counselling

Panel	Genes
<b>Gastric Cancer panel</b>	APC, BMPR1A, CDH1, CTNNA1, EPCAM, KIT, MLH1, MSH2, MSH6, NF1, PDGFRA, PMS2, SDHA, SDHB, SDHC, SDHD, SMAD4, STK11, TP53
<b>Hyperparathyroidism Cancer panel</b>	AP2S1, CASR, CDC73, CDKN1B, GNA11, MEN1, RET
<b>Melanoma Cancer panel</b>	BAP1, BRCA2, CDK4, CDKN2A, MITF, POT1, PTEN, RB1, TP53
<b>Myelodysplastic / Leukemia Cancer panel</b>	ATM, BLM, CEBPA, EPCAM, GATA2, HRAS, MLH1, MSH2, MSH6, NBN, NF1, PMS2, RUNX1, TERC, TERT, TP53
<b>Nervous System / Brain Cancer panel</b>	AIP, ALK, APC, DICER1, EPCAM, HRAS, LZTR1, MEN1, MLH1, MSH2, MSH6, NF1, NF2, PHOX2B, PMS2, PRKARIA, PTCH1, PTEN, RB1, SMARCA4, SMARCB1, SMARCE1, SUFU, TP53, TSC1, TSC2, VHL
<b>Pancreatic Cancer panel</b>	APC, ATM, BMPR1A, BRCA1, BRCA2, CDKN2A, EPCAM, MEN1, MLH1, MSH2, MSH6, NF1, PALB2, PMS2, SMAD4, STK11, TP53, TSC1, TSC2, VHL
<b>Paraganglioma-Pheochromocytoma Cancer panel</b>	MAX, NF1, RET, SDHA, SDHAF2, SDHB, SDHC, SDHD, TMEM127, VHL
<b>Prostate Cancer panel</b>	ATM, BRCA1, BRCA2, CHEK2, EPCAM, HOXB13, MLH1, MSH2, MSH6, NBN, PMS2, TP53
<b>Renal / Urinary Tract Cancer panel</b>	BAP1, CDC73, CDKN1C, DICER1, DIS3L2, EPCAM, FH, FLCN, GPC3, MET, MLH1, MSH2, MSH6, PMS2, PTEN, REST, SDHB, SDHC, SMARCA4, SMARCB1, TP53, TSC1, TSC2, VHL, WT1
<b>Sarcoma Cancer panel</b>	APC, BLM, CDKN1C, DICER1, EPCAM, EXT1, EXT2, FH, HRAS, KIT, MLH1, MSH2, MSH6, NBN, NF1, PDGFRA, PMS2, PRKARIA, PTCH1, RB1, RECQL4, SDHA, SDHB, SDHC, SDHD, SUFU, TP53, WRN
<b>Thyroid Cancer panel</b>	APC, CHEK2, DICER1, PRKARIA, PTEN, RET, TP53

Panels are \$729 CAD. Genetic counselling services may not be offered with these panels.

<b>Turn-around time (TAT)</b>	Single Gene: 4 weeks	Panels: 4-6 weeks
	Familial Mutation: 2-4 weeks Price: \$300 for point mutations, \$450 for Dosage (MLPA or qPCR)	

### Hereditary and Somatic Cancer - Selective Sequencing

Gene	Exon(s)
<b>BRAF</b>	exon 15
<b>CALR</b>	exon 9
<b>EGFR</b>	exons 18-21
<b>IDH1</b>	exon 4
<b>IDH2</b>	exon 4
<b>JAK2</b>	exons 12, 14, 16
<b>KIT</b>	exons 8, 9, 11, 13, 17
<b>KRAS</b>	exons 2, 3
<b>MPL</b>	exon 10
<b>NPM1</b>	exon 11
<b>NRAS</b>	exons 2, 3
<b>PDGFRA</b>	exons 12, 14, 18

Ranges from \$500-750 CAD, depending on the number of exons

### Somatic Mutation Cancer Panels

Gene	Exon(s)
<b>BRCA1, BRCA2 panel*</b>	BRCA1, BRCA2
<b>Myeloid tumor panel**</b>	ASXL1, CEBPA, DNMT3A, ETV6, EZH2, IDH1, IDH2, KIT, KRAS, NPM1, NRAS, PTPN11, RAD21, RUNX1, SF3B1, SMC1A, SMC3, STAG2, TET2, TP53, U2AF1, WT1
<b>Solid tumor panel***</b>	ABL1, AKT1, AKT2, AKT3, ALK, APC, AR, ARAF, ARID1A, ASXL1, ATM, ATR, ATRX, AXL, BAP1, BRAF, BRCA1, BRCA2, BTK, CBL, CCND1, CDH1, CDK12, CDK4, CDK6, CDKN1B, CDKN2A, CDKN2B, CHEK1, CHEK2, CREBBP, CSF1R, CTNNA1, DDR2, EGFR, ERBB2, ERBB3, ERBB4, ERCC2, ESR1, EZH2, FANCA, FANCD2, FANCI, FBXW7, FGFR1, FGFR2, FGFR3, FGFR4, FLT3, FOXL2, GATA2, GNAI1, GNAQ, GNAS, H3F3A, HIST1H3B, HNF1A, HRAS, IDH1, IDH2, JAK1, JAK2, JAK3, KDR, KEAP1, KIT, KMT2A, KMT2C, KMT2D, KNSTRN, KRAS, MAGOH, MAP2K1, MAP2K2, MAP2K4, MAPK1, MAX, MDM4, MED12, MEN1, MET, MLH1, MPL, MRE11, MSH2, MSH6, MTOR, MYC, MYCN, MYD88, NBN, NF1, NF2, NFE2L2, NOTCH1, NOTCH2, NOTCH3, NRAS, NTRK1, NTRK2, NTRK3, PALB2, PDGFRA, PDGFRB, PIK3CA, PIK3CB, PIK3R1, PMS2, POLE, PPP2R1A, PTCH1, PTEN, PTPN11, RAC1, RAD50, RAD51, RAD51B, RAD51C, RAD51D, RAF1, RBL1, RBM10, RET, RHEB, RHOA, RIT1, RNF43, ROS1, SETD2, SF3B1, SLX4, SMAD4, SMARCA4, SMARCB1, MO, SPOP, SRC, STAT3, STK11, TERT, TOP1, TP53, TSC1, TSC2, TSHR, U2AF1, VHL, XPO1

\*\$1,000 CAD  
 \*\*\$1,500 CAD  
 \*\*\*\$1,200 CAD

### Somatic Hotspot Testing

Gene	Hotspot
<b>BRAF</b>	c.1799T>A, p.V600E
<b>EGFR</b>	c.2573T>G, p.L858R
<b>KRAS</b>	c.35G>A, p.G12D c.35G>T, p.G12 c.38G>A, p.G13D
<b>NRAS</b>	c.181C>A, p.Q61K c.182A>G, p.Q61R c.34G>T, p.G12C c.35G>A, p.G12D

\$450 CAD, per somatic hotspot

Turn-around time (TAT)	Single Gene: 4 weeks	Panels: 4-6 weeks
	Familial Mutation: 2-4 weeks Price: \$300 for point mutations, \$450 for Dosage (MLPA or qPCR)	