CentoCancer®

STRIVE FOR THE MOST COMPLETE INFORMATION
CentoCancer® – our most comprehensive oncogenetics panel for hereditary mutations

Hereditary pathogenic variants confer an increased risk of developing cancers during an individual’s lifetime. Early identification of pathogenic variants in genes which have a predisposition to cancer is a fundamental first step in the diagnosis, management and treatment of individuals and families with hereditary cancer syndromes.

PANEL COMPOSITION

CentoCancer®, our most comprehensive cancer panel with 56 genes, offers complete answers to help you choose the best possible therapeutic approach for your patients. Each gene in CentoCancer® has been carefully selected based on its risk potential in the development of one or more of the following cancers:

- Breast
- Ovarian
- Colorectal
- Gastric
- Thyroid
- Endometrial
- Pancreatic
- Melanoma
- Renal
- Prostate

WHO SHOULD CONSIDER CentoCancer® FOR GENETIC TESTING?

CentoCancer® is appropriate for:

- Individuals with a positive personal history of early-onset cancer, rare cancer, bilateral cancer, or multiple primary cancers
- Unaffected individuals with a positive family history of multiple generations of cancers, rare cancers, or early-onset cancers
- Individuals in whom the suspected genetic diagnoses for a suspected familial cancer risk are not covered by a single targeted panel, or if a targeted panel testing was previously negative
CentoCancer® – Panel composition and methodology

CentoCancer® includes the following 56 most relevant cancer associated genes:

- APC
- CDH1
- HNF1B
- MSH2
- POLD1
- RAD51D
- STK11
- ATM
- CDK4
- HOXB13
- MSH6
- POLE
- RET
- TP53
- BARD1
- CDKN2A
- MC1R
- MUTYH
- POT1
- SDHA
- TSC1
- BLM
- CHEK2
- MEN1
- NBN
- PRSS1
- SDHAF2
- TSC2
- BMPR1A
- EPCAM
- MET
- NTHL1
- PTCH1
- SDHB
- VHL
- BRCA1
- FH
- MITF
- PALB2
- PTEN
- SDHC
- WT1
- BRCA2
- FLCN
- MLH1
- PMS1
- RAD50
- SDHD
- XRCC2
- BRIP1
- HNF1A
- MRE11A
- PMS2
- RAD51C
- SMAD4
- XRCC3

**KEY PANEL FACTS**

- Bidirectional next-generation sequencing (NGS) of all 56 genes in the panel, including coding regions (all exons) and +/-10bp exon/intron boundaries
- Coverage: >99% of target bases covered at >20x; mean coverage ≥180x
- 100% coverage of core genes: BRCA1, BRCA2, TP53
- Copy number variant (CNV) analysis from NGS data included for all genes
- Low quality single nucleotide variants (SNVs) and all relevant deletion/insertion variants are confirmed by Sanger sequencing or MLPA/qPCR prior to reporting
- All indel variants are also confirmed by Sanger sequencing prior to reporting
- CNVs are confirmed by MLPA/qPCR prior to reporting
- All relevant deep intronic variants described in the current version of HGMD® and CentoMD® are included
- Turnaround Time: 15 business days
- Required Material: ≥1μg DNA or ≥1ml EDTA blood or ≥1 CentoCard®
## Some common cancer predisposition syndromes covered by CentoCancer®

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<thead>
<tr>
<th>Syndromes</th>
<th>Associated cancers</th>
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<tbody>
<tr>
<td><strong>HEREDITARY BREAST/OVARIAN CANCER</strong>&lt;br&gt;BRCA1, BRCA2</td>
<td>Breast, ovarian, prostate, pancreatic, melanoma</td>
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<tr>
<td><strong>LI-FRAUMENI SYNDROME</strong>&lt;br&gt;TP53</td>
<td>Breast, sarcomas, adrenocortical carcinoma, leukemia, brain tumors</td>
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<td><strong>COWDEN SYNDROME</strong>&lt;br&gt;PTEN</td>
<td>Breast, thyroid, benign lesions of skin, hamartoma, renal cell carcinoma, uterine</td>
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<td><strong>HNPCC (LYNCH SYNDROME)</strong>&lt;br&gt;MLH1, MSH2, MSH6, PMS1, PMS2</td>
<td>Colorectal (often right sided and multifocal), endometrial, ovarian, small bowel, stomach, pancreas, ureter, renal pelvis</td>
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<tr>
<td><strong>FAMILIAL ADENOMATOUS POLYPOSIS</strong>&lt;br&gt;APC</td>
<td>Polyposis, colorectal, thyroid, gastric, periampullary carcinoma, hepatoblastoma</td>
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<tr>
<td><strong>VON HIPPEL-LINDAU</strong>&lt;br&gt;VHL</td>
<td>Renal cell carcinoma, retinal angioma, cerebellar hemangioblastoma, pheochromocytoma, pancreatic cysts, islet cell tumor</td>
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<tr>
<td><strong>MULTIPLE ENDOCRINE NEOPLASIA</strong>&lt;br&gt;MEN1, RET</td>
<td>Parathyroid tumors, pancreatic tumors, pituitary tumors, medullary thyroid cancer, pheochromocytoma, neuromas</td>
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Selection of genetic test/panel according to family history and clinical data

- BRCA1, BRCA2 panel
- Breast ovarian cancer panel: ATM, BARD1, BRCA1, BRCA2, BRI1P1, CDH1, CHEK2, MEN1, MLH1, MRE11A, MSH2, MSH6, MUTYH, NBN, PALB2, PMS1, PMS2, PTEN, RAD50, RAD51C, RAD51D, STK11, TP53, XRCC2
- CentoBreast® panel: ATM, BARD1, BRCA1, BRCA2, BRI1P1, CDH1, CHEK2, NBN, PALB2, PTEN, RAD51C, STK11, TP53
- Colon cancer with polyps panel: APC, BMPR1A, MUTYH, PTEN, SMAD4, STK11
- Colon cancer non-polyposis panel: EPCAM, MSH2, MLH1, MSH6, PMS2
- CentoColon extended panel: APC, BMPR1A, CDH1, CHEK2, EPCAM, MLH1, MSH2, MSH6, MUTYH, NTHL1, PMS1, POLD1, POLE, PTEN, SMAD4, STK11, TP53
- Gastric cancer panel, targeted: BMPR1A, CDH1, CHEK2, EPCAM, MLH1, MSH2, MSH6, PMS1, PMS2, SMAD4
- Ovarian cancer panel, targeted: BARD1, BRCA1, BRCA2, BRI1P1, EPCAM, MLH1, MRE11A, MSH2, MSH6, NBN, PMS1, PMS2, RAD50, RAD51C, RAD51D, STK11, TP53
- Prostate cancer panel: BRCA1, BRCA2, CHEK2, HOXB13, MLH1, MSH2, MSH6, NBN, PTEN, TP53
- Pancreatic cancer panel, targeted: APC, ATM, BMPR1A, CDKN2A, EPCAM, MLH1, MSH2, MSH6, PALB2, PMS1, PMS2, PRSS1, SMAD4, STK11
- Renal cancer panel, targeted: EPCAM, FH, FLCN, HNF1A, HNF1B, MET, MITF, MLH1, MSH2, MSH6, PMS1, PMS2, PTEN, SDH1, SDH2, SDH3, TSC1, TSC2, VHL, WT1
- Skin cancer panel, targeted: CDKN2A, EPCAM, MC1R, MITF, MLH1, MSH2, MSH6, PMS1, PMS2, POT1, PTH1, XRCC3
- Thyroid cancer panel, targeted: APC, PTEN, RET
- Uterine cancer panel, targeted: EPCAM, MLH1, MSH2, MSH6, PMS1, PMS2, PTEN
- PGL / PCC / GIST panel, targeted: GDNF, KIF1B, MAX, MEN1, NF1, RET, SDHA, SDHAF2, SDH6, SDHC, SDHD, TMEM127, TP53, VHL
- Multiple endocrine neoplasias / paraganglioma/phaeochromocytoma panel: CDKN1B, MAX, MEN1, RET, SDHA, SDHAF2, SDH6, SDHC, SDHD, TMEM127, VHL

Complex family history, variability of cancers and absence of known genetic cause in the family

- CentoCancer® panel: APC, ATM, BARD1, BLM, BMPR1A, BRCA1, BRCA2, BRI1P1, CDH1, CDK4, CDKN2A, CHEK2, EPCAM, FH, FLCN, HNF1A, HNF1B, HOXB13, MC1R, MEN1, MET, MITF, MLH1, MRE11A, MSH2, MSH6, MUTYH, NBN, NTHL1, PALB2, PMS1, PMS2, POLD1, POLE, POT1, PRSS1, PTH1, PTEN, RAD50, RAD51C, RAD51D, RET, SDHA, SDHAF2, SDH6, SDHC, SDHD, SMAD4, STK11, TP53, TSC1, TSC2, VHL, WT1, XRCC2, XRCC3

Identification of specific cancer-causing pathogenic variant

- Genetic counseling, genetic testing of all family members with consent

No pathogenic variant identified

- WES analysis on a research basis
- Research reporting

No pathogenic variants identified

- Genetic counseling, genetic testing of all family members with consent
Please visit our website for more information:

www.centogene.com

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