CENTOGENE
THE RARE DISEASE COMPANY

NGS Panels

NGS Panels for Hereditary Cancers

Genetic Testing for an Improved Prognosis

NGS Panels for Hereditary Cancers

Genetic testing for hereditary cancers can provide life-changing results in affected patients and their relatives, accompanied by potential actionable steps. With many different applications of germline genetic testing to detect and care for cancer, we can guide you in selecting the right options to enhance the treatment of your patients suffering from hereditary cancers. Having identified genetic variants associated with oncological diseases in more than 100 different genes, we can provide a comprehensive range to foster cancer diagnosis, prognosis, treatment selection, and monitoring.

CENTOGENE's NGS panels for hereditary cancers include all relevant clinical genes, as well as genes necessary for differential diagnosis of syndromes with overlapping phenotype – therefore allowing the diagnosis of a disease that otherwise would be missed. This approach maximizes the clinical utility, de-risks panel choice, increases cost-effectiveness, and ultimately simplifies the diagnostic process.

The CENTOGENE Advantage

Coverage of **all relevant disease-causing genes** and non-coding and coding pathogenic variants

Powered by CENTOGENE's Biodatabank, the **world's largest real-world data repository** for rare and neurodegenerative diseases

The most **up-to-date panel gene content** with the latest medical and in-house findings

High-quality analysis for precise clinical interpretation using artificial intelligence-powered tools and advanced bioinformatics

Key Features and Performance

Coverage	• ≥99% targeted regions covered at ≥20x • The target region for each gene comprises all exons; +/-10bp flanking regions; known pathogenic and likely pathogenic variants described in HGMD® and the CENTOGENE's Biodatabank, including relevant deep intronic and regulatory variants, which were known at the time of the assay design.
Genes	For a complete overview of included genes, please visit: centoportal.com/order/new/products/analysis-method?queryType=TEST&query=hereditary%20cancer
Specificity	≥99.9% guaranteed for all reported variants. Variants with low quality and/or unclear zygosity are confirmed by orthogonal methods (Sanger, MLPA, qPCR)
CNV Sensitivity	The CNV detection software has a sensitivity of more that 95%.
Reporting	To find more information about our medical reporting, please visit: centogene.com/diagnostics/benefits-of-genetic-testing/medical-reporting
TAT	15 business days

MLPA: Multiplex ligation-dependent probe amplification; **qPCR**: quantitative polymerase chain reaction.

Panel Overview

Panel	Genes Included
BRCA1, BRCA2	*BRCA1*, *BRCA2*
CentoBreast	*ATM*, *BARD1*, *BRCA1*, *BRCA2*, *BRIP1*, *CDH1*, *CHEK2*, *DICER1*, *EPCAM*, *FANCC*, *MEN1*, *MLH1*, *MRE11*, *MSH2*, *MSH6*, *MUTYH*, *NBN*, *PALB2 PMS2*, *PTEN*, *RAD50*, *RAD51C*, *RAD51D*, *RECQL*, *SMARCA4*, *STK11*, *TP53*, *XRCC2*
CentoCancer®	*APC*, *ATM*, *AXIN2*, *BAP1*, *BARD1*, *BLM*, *BMPR1A*, *BRCA1*, *BRCA2*, *BRIP1*, *CDH1*, *CDK4*, *CDKN2A*, *CHEK2*, *DICER1*, *DIS3L2*, *EPCAM*, *FANCC*, *FH*, *FLCN*, *GALNT12*, *HOXB13*, *KIT*, *MC1R*, *MEN1*, *MET*, *MITF*, *MLH1*, *MLH3*, *MRE11*, *MSH2*, *MSH3*, *MSH6*, *MUTYH*, *NBN*, *NF1*, *NTHL1*, *PALB2*, *PMS2*, *POLD1*, *POLE*, *POT1*, *PRSS1*, *PTCH1*, *PTEN*, *RAD50*, *RAD51C*, *RAD51D*, *RECQL*, *RET*, *RNF43*, *RPS20*, *SDHA*, *SDHAF2*, *SDHB*, *SDHC*, *SDHD*, *SMAD4*, *SMARCA4*, *STK11*, *TP53*, *TSC1*, *TSC2*, *VHL*, *WT1*, *XRCC2*, *XRCC3*
CentoCancer® Comprehensive	*ABRAXAS1*, *ACVRL1*, *AKT1*, *APC*, *ATM*, *AXIN2*, *BAP1*, *BARD1*, *BLM*, *BMPR1A*, *BRCA1*, *BRCA2*, *BRIP1*, *BUB1B*, *CASR*, *CDC73*, *CDH1*, *CDK4*, *CDKN1B*, *CDKN1C*, *CDKN2A*, *CEBPA*, *CHEK2*, *CTNNA1*, *DDB2*, *DDX41*, *DICER1*, *DIS3L2*, *EGFR*, *EPCAM*, *ERCC2*, *ERCC3*, *ERCC4*, *ERCC5*, *ETV6*, *EXT1*, *EXT2*, *FANCC*, *FH*, *FLCN*, *GALNT12*, *GATA2*, *GPC3*, *GREM1*, *HNF1A*, *HNF1B*, *HOXB13*, *HRAS*, *KIF1B*, *KIT*, *MAX*, *MC1R*, *MEN1*, *MET*, *MITF*, *MLH1*, *MLH3*, *MRE11*, *MSH2*, *MSH3*, *MSH6*, *MUTYH*, *NBN*, *NF1*, *NF2*, *NTHL1*, *PALB2*, *PDGFRA*, *PHOX2B*, *PIK3CA*, *PMS1*, *PMS2*, *POLD1*, *POLE*, *POLH*, *POT1*, *PRKAR1A*, *PRSS1*, *PTCH1*, *PTCH2*, *PTEN*, *RAD50*, *RAD51C*, *RAD51D*, *RB1*, *RECQL*, *REST*, *RET*, *RNF43*, *RPS20*, *RUNX1*, *SAMD9L*, *SDHA*, *SDHAF2*, *SDHB*, *SDHC*, *SDHD*, *SMAD4*, *SMARCA2*, *SMARCA4*, *SMARCB1*,*SMARCE1*, *STK11*, *SUFU*, *TERT*, *TGFBR2*, *TMEM127*, *TP53*, *TRIP13*, *TSC1*, *TSC2*, *VHL*, *WRN*, *WT1*, *XPA*, *XPC*, *XRCC2*, *XRCC3*
CentoCancer® Pediatric	*AIP*, *ALK*, *ANKRD26*, *APC*, *ASXL1*, *ATM*, *BAP1*, *BLM*, *BMPR1A*, *BRAF*, *BUB1B*, *CBL*, *CDC73*, *CDKN1B*, *CDKN1C*, *CEBPA*, *CREBBP*, *DDB2*, *DDX41*, *DICER1*, *DIS3L2*, *DKC1*, *EP300*, *EPCAM*, *ERCC2*, *ETV6*, *EXT1*, *EXT2*, *EZH2*, *FANCA*, *FH*, *GATA2*, *GPC3*, *HRAS*, *KRAS*, *LZTR1*, *MAP2K1*, *MAP2K2*, *MAX*, *MEN1*, *MLH1*, *MSH2*, *MSH6*, *MUTYH*, *NBN*, *NF1*, *NF2*, *NHP2*, *NKX2-1*, *NRAS*, *NSD1*, *PHOX2B*, *PMS2*, *POLH*, *PRF1*, *PRKAR1A*, *PTCH1*, *PTEN*, *PTPN11*, *RAD51C*, *RAF1*, *RB1*, *RECQL4*, *RET*, *RIT1*, *RPL5*, *RPS7*, *RUNX1*, *SAMD9L*, *SDHA*, *SDHAF2*, *SDHB*, *SDHC*, *SDHD*, *SETBP1*, *SHOC2*, *SMAD4*, *SMARCA4*, *SMARCB1*, *SMARCE1*, *SOS1*, *SOS2*, *STK11*, *SUFU*, *TERC*, *TERT*, *TINF2*, *TMEM127*, *TP53*, *TRIM37*, *TSC1*, *TSC2*, *VHL*, *WRAP53*, *WRN*, *WT1*, *XPA*, *XPC*

Disclaimer: Due to continous developments in our product portfolio the gene numbers in our panels are subject to change without prior notice.

Going The Extra Mile

All our high quality NGS panels detect single nucleotide variants (SNV), small insertions / deletions (InDels), and NGS-based deletion / duplication (CNV) analysis in one single assay – ultimately providing the most complete NGS panels for the maximum diagnostic yield.

Deletion / Duplication	High resolution NGS-based CNV analysis to detect larger deletions and duplications is included in all our panels at no extra cost. Deletion / duplications constitute 5 – 10 % of disease-causing variants. By including CNV analysis in our panels, the potential of providing the most accurate diagnosis increases.
Improved Interpretation	CENTOGENE's Biodatabank, the world's largest real-world data repository for rare and neurodegenerative diseases enables access to more than 31 million unique variants for best medical interpretation.
Variant Reclassification Program	All our panels are automatically entered into our variant reclassification program. This program supports the identification of new genetic evidence, and physicians will be notified free of charge for life.

For More Information
centogene.com

For Ordering
centoportal.com

CENTOGENE GmbH
Am Strande 7
18055 Rostock
Germany

CENTOGENE GmbH is a subsidiary of CENTOGENE N.V.

Global Partner Support
customer.support@centogene.com
+49 381 80 113-416

For US Partners
customer.support-us@centogene.com
+1 (617) 580-2102

Rostock - CLIA #99D2049715

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