LifeLabs GENETICS™

Expanded Panel

Target all clinically-relevant genes with our largest NGS panel

Utilize our Expanded (Ex) NGS Panel as an affordable exome or a custom panel

Our Ex NGS Panel allows you to change the way you think about ordering genetic testing. Simply provide us with the most in-depth medical information for your patient and we will explore the 6,700 genes with known clinical relevance (often referred to as the clinical exome).

The Ex Panel is best suited for physicians who:

- Aim to gain deeper insights into clinically-relevant genes
- Have a patient with an unidentified and/or highly heterogeneous phenotype
- Do not have access to whole exome sequencing
- Have a patient with an identified phenotype and are in search of an affordable, clinically-based exome instead of a disease-specific panel

Key features include:

- Largest panel available, covering >6,700 genes, related to 3,200 diseases
- No need to choose a panel, as all >6,700 genes are always sequenced
- 1 step process, meaning no additional step of reflexing to the larger data set
- Raw data available, upon request
- CNV detection by NGS included

Test Methodology

Coverage*	>99% of targeted bases covered at minimum 20x
Genes Covered**	~6,700 genes
Genomic Regions Covered	Exons, deep intronic mutations, 20bp exon/intron boundaries
Read Depth	80-100x average read depth
Turn-Around Time	4-6 weeks
CNV detection by NGS	Included
Mitochondrial Genome (>1000x read depth)	Available as an add-on
Repeat Expansion Testing	Available as an add-on
Prenatal Testing	Available on request
Available as Singleton (solo) or Trio	Singleton only
Availability of Research Report	Yes
Availability of Raw Data***	Yes

*This panel does not target all exons within the human genome. Targeted exons may not be well covered due to various technical reasons (Choi M, et al. (2009) Proc Natl Acad Sci; Yang Y, et al. (2013) N Engl J Med). These missing regions are not backfilled by Sanger, however, we will provide coverage statistics about targeted genes. **>4,000 genes have 100% coverage of targeted regions at >20x . ***.fastq and .bam files are available for 30 days after report delivery and .vcf files are available indefinitely.
Current as of July 2019. As technology improves and is clinically validated, so does our methodology. Please contact us for more details.

Each diagnostic report is:

Validated by a team of renowned and experienced clinical specialists

Cross-checked against CentoMD®, an extensive and evolving database of known mutations, as well as HGMD and ClinVar

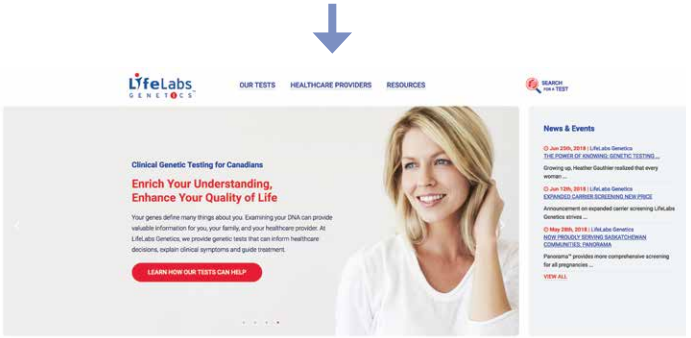
Comprehensive and includes a description of the testing method and a full explanation of results & recommendations

Visit www.lifelabsgenetics.com to learn more about our diagnostic panels.
Contact us Ask.Genetics@LifeLabs.com | 1-84-GENEHELP (1-844-363-4357)

Expanded Panel

Ordering instructions

1 **Download the hereditary testing requisition form** under the Healthcare Providers tab at LifeLabsGenetics.com



2 The Ordering Checklist on **page 1** can be used to ensure you've completed all the necessary pages of the requisition.

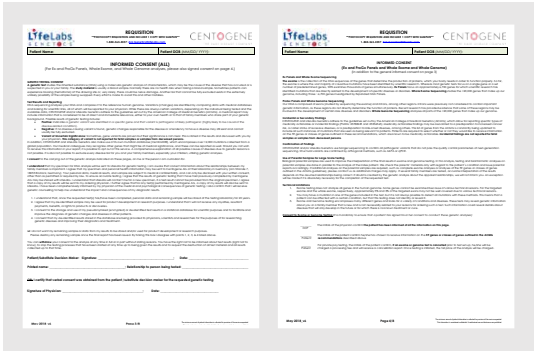
Ordering Checklist		Sample Type		
Known variant Single gene	Must complete pages 1, 2, & 3 □ Physician, patient, & test information (p1-2) □ Informed consent (p3)		LL TC	Mnemonic
Fx Panels Ex Panels ProGx Panels	Must complete pages 1-5 □ Physician, patient, & test information (p1-2) □ Informed consent (p3-4) □ Clinical features checklist (p5)	❑ Blood-Adult (2 x 4ml EDTA) ❑ Blood-Pediatric (1 x 2ml EDTA) ❑ Purified DNA (Single genes: 1-10ug, Panels: 10-100ug) ❑ Filter card* ❑ Other:**	4005 4008 4014 4014 4014	ACG CEN OCG OCG OCG
Whole Exome Sequencing (WES) Whole Genome Sequencing (WGS)	Must complete pages 1-8 (if applicable) □ Physician, patient, & test information (p1-2) □ Informed consent (p3-4) □ Clinical features checklist (p5) □ Parental 1 & 2 requisitions (p6-7) *(If Trio selected)* □ Additional Family Member requisition (p8) *(If Trio/Plus selected OR Parental samples unavailable)*	* Available by request. Please contact LifeLabs Genetics. ** Other sample types are permitted. Please contact LifeLabs Genetics for details. **Please contact LifeLabs Genetics before shipping prenatal samples.** Samples should be shipped directly to Centogene.		
Date Sample Collected: M M D D Y Y Y Y		Time Collected: H H M M		Collector Name:

3 In the Ex Panel section on **page 2 of the requisition form**, use test code CN50088, indicate the name of the panel that best represents the patient's clinical indications, and select the methodologies (sequencing, deletion/duplication, etc.).

- If your patient's clinical indications can be attributed to multiple gene panels, please use the Additional Information or Instructions section to identify these panels.

Expanded Panels	❑ **Ex Panels** *(by CentoDxPlus)* 80-100x average read depth ~95% of targeted bases covered at >20x **Test Code(s) / Reference Number(s):** _____ **Test Name(s):** _____ ❑ Sequencing + Deletion/Duplication *(by CentoDxPlus + CNV)* ❑ Sequencing only *(by CentoDxPlus)*

4 **Both pages of the Informed Consent are required to be signed,** as the Ex Panel might identify findings outside of the primary reason for genetic testing.



! For all testing, we strongly encourage you to provide the patient's in-depth medical history to ensure the most comprehensive analysis and interpretation of the genetic testing results. This can be done through any of the following three ways:

- Writing in the Relevant Medical and Family History section on **page 1**
- Completing the checkboxes on **page 5**
- Providing the patient's hospital charts