

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
- Availability of deletion/duplication analyses as an add-on

### Test Methodology

<b>Coverage*</b>	95% of targeted bases covered at minimum 20x
<b>Genes Covered**</b>	~6,700 genes
<b>Genomic Regions Covered</b>	Exons, deep intronic mutations, 10bp exon/intron boundaries
<b>Read Depth</b>	80-100x average read depth
<b>Turn-Around Time</b>	4-6 weeks
<b>Deletion/Duplication</b> via NGS or aCGH (>25kb for copy number gain and >200kb for copy number loss)	Available as an add-on
<b>Mitochondrial Genome</b> (>1000x read depth)	Available as an add-on
<b>Repeat Expansion Testing</b>	Available as an add-on
<b>Prenatal Testing</b>	Available on request
<b>Available as Singleton (solo) or Trio</b>	Singleton only
<b>Availability of Research Report</b>	No
<b>Availability of Raw Data***</b>	Available on request

\*Exomes do not target all exons within the human genome and ~5% of the 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 May 2018. 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



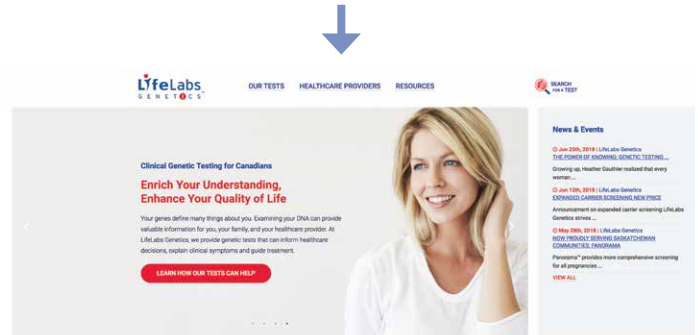
Cross-checked against CentoMD®, an extensive and evolving database of known mutations, as well as HGMD and ClinVar



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

## 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	<ul style="list-style-type: none"> <li>Must complete pages 1, 2, &amp; 3</li> <li>Physician, patient, &amp; test information (p1-2)</li> <li>Informed consent (p3)</li> </ul>	<input type="checkbox"/> Blood-Adult (2 x 4m EDTA) <input type="checkbox"/> Blood-Pediatric <input type="checkbox"/> Purified DNA <small>(single genes: 100µg; Panels: 10,100µg)</small> <input type="checkbox"/> Filter card* <input type="checkbox"/> Other**	LLTC	Mnemonic
Single gene			4005	ACG
FX Panels	<ul style="list-style-type: none"> <li>Must complete pages 1-5</li> <li>Physician, patient, &amp; test information (p1-2)</li> <li>Informed consent (p3-4)</li> <li>Clinical features checklist (p5)</li> </ul>		4008	CEN
Ex Panels			4014	OCC
ProGX Panels			4014	OCC
Whole Exome Sequencing (WES)	<ul style="list-style-type: none"> <li>Must complete pages 1-8 (if applicable)</li> <li>Physician, patient, &amp; test information (p1-2)</li> <li>Informed consent (p3-4)</li> <li>Clinical features checklist (p5)</li> <li>Parental 1 &amp; 2 requisitions (p4-7)</li> <li>If no selected</li> <li>Additional Family Member requisition (p8)</li> <li>If not selected (if possible, selected kit format samples unavailable)</li> </ul>		4014	OCC
Whole Genome Sequencing (WGS)			4014	OCC
		* Available by request. Please contact LifeLabs Genetics. ** Other sample types are permitted. Please contact LifeLabs Genetics for details. Please contact LifeLabs Genetics <a href="#">before shipping prenatal samples</a> . Samples should be shipped directly to Centogene.		
Date Sample Collected:	M A D / Y Y Y Y	Time Collected:	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.).

**Expanded Panels**

Ex Panels (by CentoDxPlus)  
80-100x average read depth  
~95% of targeted bases covered at >20x

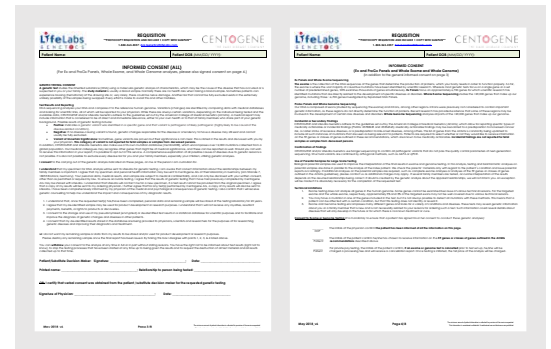
Test Code(s) / Reference Number(s): \_\_\_\_\_

Test Name(s): \_\_\_\_\_

Sequencing + Deletion/Duplication (by CentoDxPlus + CNV)  
 Sequencing only (by CentoDxPlus)

- 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.

**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