LifeLabs GENETICS™ Progressive Panels

The flexibility of a panel with the power of the whole genome

Harness the power of our Progressive (ProGx) NGS Panels

Our custom diagnostic panels allow you to continue to utilize multi-gene panel testing, while also experiencing the benefits of continuously evolving methodologies.

ProGx panels are best suited for physicians who:

- Have a patient with an unidentified or heterogeneous phenotype, where whole exome sequencing has already been attempted or was not available
- Have a patient with an identified phenotype, but prefer to test a large number of genes related to the specified clinical indications
- Would like to expand on the fixed content panels currently offered through LifeLabs or any other provider of genetic testing
- Would like the ability to reflex to a larger data set if their choice in panel comes back negative

Key features include:

- Run on the backbone of whole genome sequencing, allowing for increased coverage of the genic regions, including exons, introns, and intergenic regions
- Reduced PCR bias to minimize artifacts
- Higher accuracy of detecting CNVs and complex gene rearrangements
- Shortened diagnostic odyssey by eliminating the additional costs and time delays of step-wise analyses
- Mitochondrial analyses, when applicable
- Reflex to whole genome sequencing available

Test Methodology

Coverage*	>99% of targeted bases covered at minimum 10x
Genes Covered	Fixed content or custom gene panels available
Genomic Regions Covered	All genomic regions, including promoters, introns, and untranslated regions
Read Depth	30x average read depth
Turn-Around Time	4-6 weeks
Deletion/Duplication	Included via WGS-based analysis
Mitochondrial Genome	Included upon request, via NGS-based analysis
Repeat Expansion Testing	Available as an add-on
Prenatal Testing	Available on request
Available as Singleton (solo) or Trio	Singleton only
Reflex to Larger Data	Reflex to Whole Genome Sequencing available at additional cost
Availability of Research Report	Available only after reflex to larger data set
Availability of Raw Data	Available only after reflex to larger data set

*Genome sequencing may not cover 100% of all bases in the human genome due to various technical reasons. These missing regions are not backfilled by Sanger, however, we will provide coverage statistics for targeted genes. 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

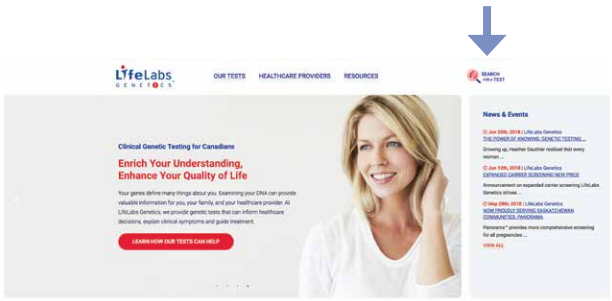
Comprehensive and includes a description of the testing method and a full explanation of results & recommendations

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

LifeLabs GENETICS™ Progressive Panels

Ordering instructions

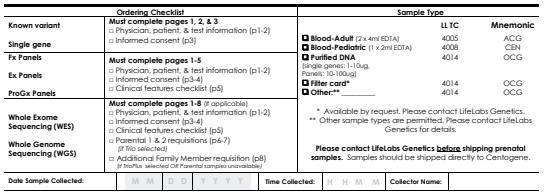
1 Use the **LifeLabsGenetics.com search tool** to identify the panel(s) that best represents the patient's clinical indications.



2 **Provide the names of these panels** to your territory manager to receive your reference number.

This reference number can be used repeatedly for other patients displaying similar clinical indications.

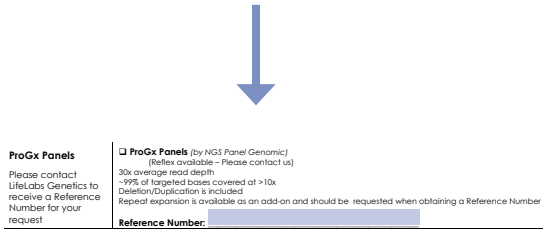
3 The Ordering Checklist on **page 1** can be used to ensure you've completed all the necessary pages of the requisition.



Ordering Checklist		Sample Type		
			LL TC	Mnemonic
Known variant Single gene	Must complete pages 1, 2, & 3 □ Physician, patient, & test information (p1-2) □ Informed consent (p3)	❑ Blood-Adult (2 x 4ml EDTA)	4005	ACG
		❑ Blood-Pediatric (1 x 2ml EDTA)	4008	CEN
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)	❑ Purified DNA (single genes: 1-10ug, Panels: 10-100ug)	4014	OCG
		❑ Filter card*	4014	OCG
		❑ Other:** _____	4014	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/Fx 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:	

4 In the ProGx Panels section on **page 2** of the requistion form:

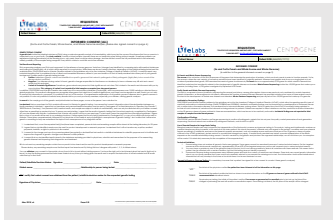
- Select if you would like an automatic reflex to whole genome sequencing if the results of the panel are negative. Please note that additional charges may apply.
- Write the reference number provided to you by your territory manager.
- If you have selected the automatic reflex option:
  - You may also select to receive a Research Report, which includes potential disease-causing variants in candidate genes for which there is not yet sufficient published evidence.
  - You may also select to receive the raw data, in one of three potential formats.



ProGx Panels	
Please contact LifeLabs Genetics to receive a Reference Number for your request	❑ **ProGx Panels** *(by NGS Panel Genomic)* (Reflex available – Please contact us) 30x average read depth ~99% of targeted bases covered at >10x Deletion/Duplication is included Repeat expansion is available as an add-on and should be requested when obtaining a Reference Number **Reference Number:**

5 **Only page 1 of the Informed Consent is required to be signed.**

We recommend also completing the second page of the consent form, in the event that a reflex to whole genome sequencing will be required.



! 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