RAINBOW
GENOMICS

Expert Genetic Risk Assessment Tests Using Clinical Exome Sequencing

Introduction

Rainbow Genomics is a US– and Hong Kong–based genomics health company providing genetic tests, personalized risk assessment and health management programs for Asian patients. Our diagnostic tests, clinical interpretation and physician reporting are developed specifically for Asian patients based on their specific genetics. Plus, genetic counseling and follow–on health management plans are provided, to assure that patients can take full advantage of our clinically–actionable reports.

Fully-Integrated Testing and Clinical Interpretation

Our genetic tests are based on clinical whole exome sequencing technology. This next–generation sequencing process is performed at CAP–accredited or CLIA–certified laboratories. To assure highly accurate test results, clinical interpretation is performed by the University of California, Los Angeles (UCLA) Clinical Genomics Center, one of the largest and oldest genetic testing laboratories in the US. In addition, some of the test results will also be analyzed by genome medicine specialists at the Juntendo University in Japan, to assure accurate diagnosis based on the most–up–to–date understanding of Asian genetics.

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Products & Services

Rainbow Cardio™
Rainbow Pediatric Care™
Rainbow MMC™ (Mendelian & Monogenic Conditions)

Rainbow Cardio™

This test provides a comprehensive risk assessment on multiple hereditary cardiovascular diseases simultaneously, plus population risk determination of two common–complex cardiovascular conditions. This test uses both exome sequencing and Sanger sequencing processes. Covered conditions include heart attack, atrial fibrillation, cardiomyopathy, arrhythmia, congenital heart disease and pulmonary arterial hypertension, etc.

Rainbow Pediatric Care™

Clinical exome sequencing is particularly useful for children with Mendelian disorders[1]. This includes cases without a prior genetic syndrome from any family members. Often, these young patients went through multiple genetic and biochemical testing without obtaining a diagnosis, thus delaying the treatment of their conditions. The Rainbow Pediatric Care test combines exome sequencing at 100 fold sequencing depth, with UCLA Clinical Genomics Center's multiple years of experience in clinical interpretations to enhance the yield of a positive diagnosis. Suitable conditions include various developmental delays, neurological disorders, epilepsy, autism, hypotonia, childhood–onset ataxia, and dysmorphic features, etc.

Rainbow MMC™ (Mendelian & Monogenic Conditions)

Adults with Mendelian disorders or monogenic diseases could benefit from clinical exome sequencing. Similar to the descriptions for pediatric cases above, Rainbow MMC test may provide a definitive diagnosis after multiple panel gene testing, biochemical and electrochemical clinical analysis that failed to produce a positive result. Our physicians will determine the disease condition (phenotypes), and our analysis will focus on determining a causative genetic variant associated with this condition. Patients with the following conditions may benefit from this test – cancer predisposition, neurological and retinal disorders, cardiomyopathy, arrhythmia and a wide range of Mendelian disorders.

Comply with United States Clinical Regulatory & Patient Privacy Standards

Rainbow's DNA sequencing and clinical interpretation processes comply with current US clinical testing standards

- Clinical exome sequencing performed at either CAP– (College of American Pathologists) accredited or CLIA– (Clinical Laboratory Improvement Amendments) certified laboratories.
- Clinical interpretation provided by the UCLA Clinical Genomics Center according to the current ACMG (American College of Medical Genetics and Genomics) guidelines. The UCLA Clinical Genomics Center also issues physician reports signed–off by their board–certified medical directors.
- Additional clinical interpretation provided by the Juntendo University is in compliant with Japan's clinical testing guidelines
- Patient data privacy – Rainbow follows the US Health Insurance Portability and Accountability Act (HIPAA) privacy rules, established to protect the confidentiality of patients' individually identifiable health information.

ACMG Incidental Findings

Included with our exome sequencing test is the reporting of ACMG incidental findings[2], which include breast cancer, Lynch syndrome (colon cancer), cardiomyopathy, arrhythmia and other conditions. These are findings supported by pathogenic or likely pathogenic variants (based on ACMG interpretation guideline) that may or may not be related to the patient's primary conditions. Adult patients can choose to receive these findings, or "opt out" of learning about these findings.

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Unique Benefits

End diagnostic odyssey. Many patients, especially those in pediatric care, have gone through multiple genetic and biochemical testing without a positive diagnosis. It has been widely demonstrated that exome sequencing, by analyzing over 22,000 genes simultaneously, can produce high diagnostic yield that ends diagnostic odyssey. A positive diagnosis can immediately help physicians to implement treatment and monitoring programs[1–3].

One exome supports clinical interpretation on multiple conditions. With exome sequencing data covering over 22,000 genes, patients can request to receive clinical interpretation on additional conditions not originally ordered by their physicians. Please contact us for more information on this option and associated fees.

Test results specifically for Asian patients. The medical teams at both the UCLA Clinical Genomics Center and the Juntendo University have many years of experience providing genetic testing to Asian patients. More importantly, our Japanese bioinformaticians and clinicians are trained to provide clinical interpretation specifically for Asian patients including Chinese and Japanese individuals.

How To Order Our Tests

Rainbow Genomics' tests are available at our local partners' clinical labs. Please contact us for more information and a list of local clinics.

info@rainbowgenomics.com

Authorized Clinical Partner

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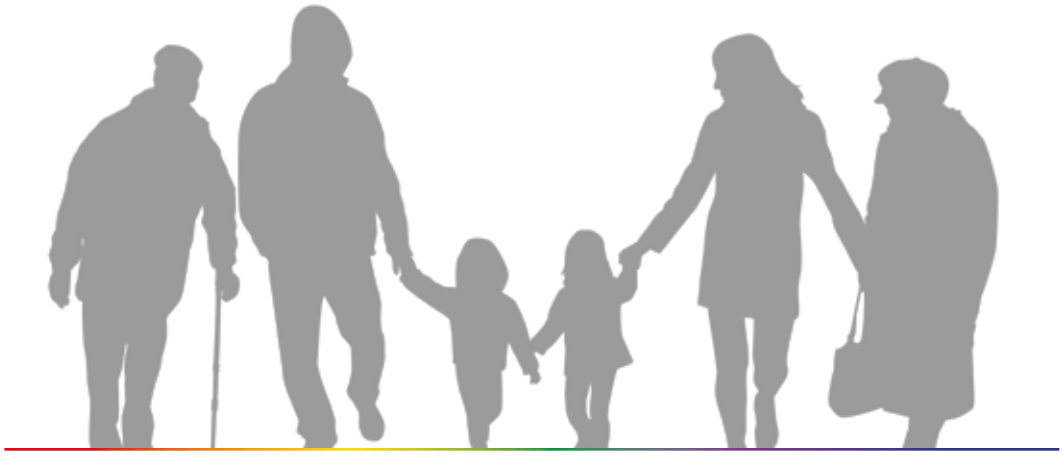
info@rainbowgenomics.com



References
1. Clinical Exome Sequencing for Genetic Identification of Rare Mendelian Disorders. JAMA. 2014; 312(18):1880-1887.
2. ACMG recommendations for reporting of incidental findings in clinical exome and genome sequencing. Genetics in Medicine. (2013) 15, 565–574
3. Recommendations for the integration of genomics into clinical practice. Genet Med. 2016 May 12

Company
Rainbow Genomics is a registered corporation in Hong Kong with operations in Hong Kong and San Francisco, USA.