# Rainbow Genomics Launches Whole Genome Sequencing Supported by Multiple Genomic Technologies

*Enables Timely Diagnosis for Patients Affected by Rare Diseases, Developmental and Neurological Disorders*

Whole Genome Sequencing & Evidence-Based Genomics Testing

HONG KONG, CHINA, September 26, 2021 /EINPresswire.com/ -- Hong Kong-based Rainbow Genomics announced the integration of multiple genomic technologies and bioinformatics platforms, with primary testing based on whole genome sequencing, to push for high diagnostic yield for pediatric and adult patients affected by rare diseases, developmental, behavioral and neurological disorders.

With its U.S., U.K. and Israeli technology partners, Rainbow offers whole genome sequencing coupled with a 1.6Kb high-resolution microarray as a standard test approach. This initial test determines challenging mutations including copy number variants and large structural genetic changes. In addition, RNA sequencing and Sanger sequencing with compelling informatics tools are used to determine variants not readily confirmed by whole genome sequencing alone, including intronic and mosaic variants. Long-read sequencing platforms are also used to further validate complex copy number variants.

The combination of these technologies enables the confirmation of novel variants detected in Asians and other minority populations, often without prior evidence from any international databases. Timely diagnosis can be achieved without lengthy sequential testing, a process often used by local hospitals.

In the areas of bioinformatics, Rainbow relies on multiple pipelines and interpretation platforms, using a range of analytics including advanced algorithms, artificial intelligence, natural language processors, and automated variant classification tools, to improve the entire analysis and clinical interpretation process.  This integrated automation also enables substantial cost and turnaround time reduction.

Equally important, Rainbow's whole genome and whole exome sequencing tests are now offered at a cost level amenable to middle class patients.  A special public-hospital pricing program is also available to help low-income families afford complex genomic testing.

"Many pediatric patients affected by hereditary forms of autism spectrum disorders and neuro-developmental conditions do not receive a diagnosis through traditional genetic testing, because the mutations are complex or novel, and often missed by gene panel or even whole exome sequencing," said Dr. Fanny Lam, Specialist in Developmental-Behavioural Paediatrics, at the Hong Kong Developmental Paediatrics and Child Neurology Centre. "Whole genome sequencing test coupled with microarray confirmation, enables timely- and cost-effective diagnoses. Once a genetic etiology is determined, we can provide early and tailor-made intervention to enhance the quality of life of the affected children, in the context of social and communication development, behavior and learning."

"Majority of neurological disorders have been shown to possess variable degrees of genetic heritability.  In addition, an accurate genetic diagnosis is critical because increasing numbers of clinical therapeutics are gene mutation specific. Whole genome sequencing coupled with multi-platform analysis provides a relatively-high diagnostic yield in selected patients with complex neurological disorders," said Dr. Tim Liu, Specialist in Paediatric Neurology at the Hong Kong Developmental Paediatrics and Child Neurology Centre. "An early and accurate diagnosis not only helps physicians improve patient management and avoid unnecessary invasive procedures, it also alleviates distress in parents who can now plan for their children's future healthcare needs."

"We are pleased to put together a compelling infrastructure offering whole genome sequencing, high-resolution microarray, transcriptome, Sanger and long-read sequencing to achieve high diagnostic yields at a fast turnaround time. This milestone was achieved during the past year while we were impacted by the COVID19 pandemic," said Daniel Siu, CEO of Rainbow Genomics. "With this approach, we have been issuing significantly more clinical reports with pathogenic mutation findings from Asian, Caucasian, mixed-race and local minority populations, compared to reports using whole exome sequencing testing alone."

About Hong Kong Developmental Paediatrics and Child Neurology Centre
The mission of the Hong Kong Developmental Paediatrics and Child Neurology Centre (https://hkdpc.com/) is to enable full development of every child's potentials and strengths, and to ensure the earliest identification and intervention of child's areas of weakness in development. The centre focuses on paediatric developmental disorders, acute and chronic neurological conditions, rare diseases and psychosocial problems.

About Rainbow Genomics
Rainbow Genomics (www.rainbowgenomics.com) is committed to providing clinically-validated genomic testing to Asian, Caucasian, mixed-race and local minority populations. The company

delivers high diagnostic success for physicians, enabling timely-treatment for patients, especially for affected children that require immediate medical interventions.

Utilizing a multi-technology-platform approach, including whole genome and RNA sequencing, high-resolution microarray, long-read and Sanger sequencing, high-density DNA array genotyping, and through multiple international collaborations, Rainbow Genomics delivers a diagnostic yield exceeding the highest standards reported by leading U.S. and European medical institutions.

All Rainbow Genomics tests are performed in CLIA-certified and CAP-accredited high-complexity clinical laboratories.  Patient privacy is protected by Rainbow's HIPAA-compliant clinical testing process.

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