GLOSSARY OF TECHNICAL TERMS

This glossary contains explanations of certain technical terms used in this document in connection with us and our business. Such terminology and meanings may not correspond to standard industry meanings or usages of those terms.

"AC"	alternating current, an electric current that changes its direction and magnitude periodically
"AI"	artificial intelligence, the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions
"AIDS"	acquired immunodeficiency syndrome, a disease in which there is a severe loss of the body's cellular immunity, greatly lowering the resistance to infection and malignancy
"Alzheimer's disease"	a disease caused by the accumulation of abnormal protein structures in the brain, which leads to the death of brain cells and the shrinking of brain tissue, affecting patients' memory and thinking skills
"base calling"	the process of translating raw data from a sequencer into a sequence of nucleotides
"biochip"	a small-scale device, analogous to an integrated circuit, constructed of or used to analyze organic molecules associated with living organisms
"bioinformatics"	an interdisciplinary study field combining biology, computer science, statistics and information technology to analyze, interpret and manage biological data
"biomarker"	a biological molecule found in blood, other body fluids, or tissues that is a sign of a normal or abnormal process, or of a condition or disease. A biomarker may be used to see how well the body responds to a treatment for a disease or condition
"BT"	biotechnology, the exploitation of biological processes for industrial and other purposes, especially the genetic manipulation of microorganisms for the production of antibiotics, hormones, etc.
"CAGR"	compound annual growth rate

"cDNA"	complementary DNA, a synthetic DNA that has been transcribed from a specific mRNA through a reaction using the enzyme reverse transcriptase. While DNA is composed of both coding and non-coding sequences, cDNA contains only coding sequences
"CE marking"	Conformité Européenne marking, a certification marking that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area
"chemiluminescence"	a phenomenon in which a chemical reaction leads to the emission of light without incandescence
"Class II medical device"	medical devices with moderate risks, which shall be strictly controlled and administered to ensure their safety and efficacy under the Regulation on the Supervision and Administration of Medical Devices (《醫療器械監督管理條例》)
"CMOS"	complementary metal oxide semiconductor, an integrated circuit that incorporates negative channel (n-channel) and positive channel (p-channel) transistors within the same circuit design
"CRO"	contract research organization, a company that provides support to the pharmaceutical, biotechnology, and medical device industries in the form of research services outsourced on a contractual basis
"CTC"	circulating tumor cell, a cancer cell that breaks away from the original (primary) tumor and enters the bloodstream
"ctDNA"	circulating tumor DNA, tumor-derived fragmented DNA in the bloodstream that is not associated with cells
"ctRNA"	circulating tumor RNA, fragments of RNA derived from tumor cells that are released into the bloodstream
"CV"	coefficient of variation, a measurement in statistics that shows the relative dispersion of data points with respect to its mean

"DC"	direct current, an electric current that flows in only one direction
"ddNTPs"	dideoxyribonucleoside triphosphates, artificial DNA nucleotides that are used in DNA sequencing according to Sanger sequencing technologies
"*de novo*"	from the beginning
"deep learning"	a machine learning technique that constructs artificial neural networks with multiple layers to extract features from the raw input
"DNA"	a molecule that carries most of the genetic instructions used in the development, functioning and reproduction of all known living organisms and many viruses
"dNTPs"	deoxynucleoside triphosphates, the building blocks of DNA, consisting of a deoxyribose sugar, a nitrogenous base, and three phosphate groups
"dPCR"	digital PCR, a specialized approach to nucleic acid detection and quantification that estimates absolute numbers of molecules through statistical methods
"EL-NGS"	electrochemical long-read next-generation sequencing
"ELISA"	enzyme-linked immunosorbent assay, a serological assay in which bound antigen or antibody is detected by a linked enzyme that converts a colourless substrate into a coloured product
"enzyme"	a biological macromolecule that acts as a catalyst
"epigenetics"	the study of the epigenome, generally focusing on how cells control gene activity through non-genetic modifications like DNA methylation and histone modification
"exosome"	nano-sized vesicle secreted from different cell types that contains any of various biomolecules, such as proteins or nucleic acids

"extracellular vesicles"	nano-scale membrane structures released by cells, which are widely found in body fluids such as blood, saliva, and urine
"FISH"	fluorescence *in situ* hybridization, a laboratory technique for detecting and locating a specific DNA sequence on a chromosome
"gene"	a molecular unit of heredity of a living organism
"gene synthesis"	the process of artificially creating a gene or a DNA sequence in the laboratory using chemical or enzymatic methods
"genome"	the entire set of genetic information of cells or organisms, stored in long molecules of DNA called chromosomes
"genomics"	the study of the total or part of the gene sequence information of organisms, focusing on their structure, function, evolution, mapping and editing of information coded within DNA
"GMP"	good manufacturing practices, quality assurance guideline that ensures that medicinal products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the product specification
"Green Path"	the Special Registration Procedures for Innovative Class II Medical Devices in Jiangsu Province (江蘇省第二類醫療器械創新產品註冊程序), pursuant to which priority review and approval will be applicable to certain innovative medical devices
"hepatitis"	inflammation of the liver that results from a variety of causes, both infectious and noninfectious
"HPLC"	high performance liquid chromatography, a method to separate complex protein mixtures, in which the mobile phase is a liquid, with improved flow rates resulting from the high pressure system to enhance separation capacity and improve speed

"IC"	integrated circuit, a small unit or package which is made as a single indivisible structure (such as a chip) and is electrically equivalent to a conventional circuit of many separate components
"immunofluorescence"	a technique used for light microscopy with a fluorescence microscope and is used primarily on microbiological samples
"KOLs"	key opinion leaders; refer to renowned physicians that influence their peers' medical practice
"lab-on-chip microfluidics"	a miniature device that integrates laboratory functions onto a single microscale platform
"library"	a large collection of biological samples, molecules or gene sequences cloned from a given organism, tissue, organ, or cell type
"liquid biopsy"	a test done on a sample of peripheral blood to look for cancer cells from a tumor that are circulating in the blood or for pieces of DNA from tumor cells that are in the blood
"long-read sequencing"	a DNA sequencing approach that enables the sequencing of much longer DNA fragments than traditional short-read sequencing methods
"machine learning"	the study of computer algorithms that improves automatically through experience which is seen as a subset of artificial intelligence
"mass spectrometry"	an analytic technique by which chemical substances are identified by the sorting of gaseous ions in electric and magnetic fields according to their mass-to-charge ratios
"microarray"	a grid of DNA segments of known sequence that is used to test and map DNA fragments, antibodies, or proteins
"microfluidic"	the design and the application of technical systems which manipulate fluids at the microscale

"mNGS"	metagenomic next-generation sequencing, a shotgun sequencing approach in which all of the nucleic acid (DNA and RNA) in a clinical sample is sequenced at a very high depth, 10-20 million sequences per sample
"molecular diagnostics"	laboratory methods that are used to help identify a disease or the risk of developing a disease, such as cancer, by studying molecules, such as DNA, RNA, and proteins, in a tissue or fluid sample
"MRD"	minimal residual disease, a very small number of cancer cells that remain in the body during or after treatment
"multi-omics"	a biological analysis approach which combines the assessment of different omics groups, including genomics, proteomics, transcriptomics, and epigenomics in order to gain a holistic understanding of biological processes
"mutation"	an alteration in the nucleotide sequence of a DNA molecule
"nanopore sequencing"	a laboratory technique that uses nanopore technology to read DNA molecules as they pass through a nanopore, or small hole, in a membrane
"neural network"	a computational model inspired by the way biological neurons work in the human brain
"NGS"	next-generation sequencing, a high throughput, massively parallel sequencing method used to determine the nucleotide sequence of genome in a single biochemical reaction volume
"NIPT"	non-invasive prenatal testing, a genetic screening method used during pregnancy to assess the risk of certain chromosomal conditions in the fetus
"nucleic acid"	a complex organic substance presents in living cells, especially DNA or RNA, whose molecules consist of many nucleotides linked in a long chain
"nucleotide"	the basic building block of nucleic acids such as DNA and RNA

"oligonucleotide"	a short chain of nucleotides that consist of either single- or double-stranded DNA or RNA
"omics"	a group of biological profiling sciences, derived from the suffix "-omics," covering terms including genomics, proteomics, transcriptomics and epigenetics, each seeking to analyze biological molecules or components within a cell, tissue or organism, and how it determines the structure, function, and interactions of the organism. These studies signify comprehensive and systematic approaches to studying biological systems
"pathogen"	a bacterium, virus, or other microorganism that can cause disease
"PCR"	polymerase chain reaction, a method widely used to rapidly make millions to billions of copies of a specific DNA sample
"PET"	polyethylene terephthalate, a common thermoplastic polymer resin of the polyester family
"pH"	potential of hydrogen, a scale used to specify the acidity or basicity of an aqueous solution
"POCT"	point-of-care testing, the analysis of patient specimens near or at the site of patient care, usually performed by clinical staff without laboratory training, also encompassing patient self-monitoring
"polymerases"	an enzyme which brings about the formation of a particular polymer, especially DNA or RNA
"proteomics"	the study of proteomes, focusing on characterizing and identifying protein expression patterns in response to specific stimuli or following genomic or transcriptomic changes
"QA"	quality assurance
"QC"	quality control

"qPCR"	quantitative PCR, a PCR-based technique that couples amplification of a target DNA sequence with quantification of the concentration of that DNA species in the reaction
"reverse transcription"	the reverse of normal transcription, occurring in some RNA viruses, in which a sequence of nucleotides is copied from an RNA template during the synthesis of a molecule of DNA
"RNA"	ribonucleic acid, a molecule made up of one or more nucleotides that plays an essential biological role in coding, decoding, regulation, and expression of genes
"RSV"	respiratory syncytial virus, a common, contagious virus that causes infections of the respiratory tract
"RT-PCR"	reverse transcription PCR, a laboratory technique combining reverse transcription of RNA into DNA (in this context called complementary DNA or cDNA) and amplification of specific DNA targets using PCR
"RUO"	research use only, a term commonly used in the context of laboratory regents, kits, or products that are intended for research purposes and not for diagnostic, therapeutic, or other clinical applications. RUO products are designed and labeled specifically for use in scientific research, experimentation, and analysis in a controlled laboratory setting
"Sanger sequencing"	a traditional method for determining nucleotide sequences of DNA by identifying different DNA fragments through fluorescent signal first developed by Frederick Sanger and his colleagues in 1970s, also known as the "chain-terminal method"
"SBS"	sequencing by synthesis
"semiconductor"	a solid substance that has a conductivity between that of an insulator and that of most metals, either due to the addition of an impurity or because of temperature effects

"single molecule sequencing"	a sequencing technology by which sequencing data are obtained from a DNA polymerase performing uninterrupted template-directed synthesis using four distinguishable labelled deoxyribonucleoside triphosphates
"SNP"	single nucleotide polymorphism, a genomic variant at a single base position in the DNA
"tNGS"	targeted next generation sequencing, a sequencing technology that focuses on a selected subset of genes or genomic regions of interest, allowing high coverage and deep analysis of specific targets rather than sequencing the entire genome
"Western blot"	a technique designed to detect specific protein present in a heterogeneous sample