

Glossary

A

■ Amyloid β

A type of protein. Waste from nerve cells in the brain, the accumulation of which damages cranial nerve cells.

B

■ BEAMing

An acronym for “Bead, Emulsion, Amplification, and Magnetics,” this gene analysis method combines digital PCR (ultrahigh-sensitivity PCR) and flow cytometry technologies.

■ B/F separation

B stands for bond, and F for free. B/F separation refers to the separation of antigens that bind with antibodies and antigens that do not bind with antibodies.

■ Bioinformatics

Information technology used to analyze genetic and protein information and explain vital phenomena; in particular, technology for analyzing the relationships between genetic information and disease.

■ BNA Clump PCR

BNA is a chemical compound which is similar in structure to DNA. It combines strongly with complementary nucleic acid and forms stable double-stranded chain. Utilizing this feature, BNA clamp inhibits unwanted amplification which helps minimize the background noise. For detection of mutations with conventional PCR, background noise from normal genes reduce the sensitivity of detection, However, BNA clamp PCR is highly sensitive technology for detection of mutations because of selective amplification of mutated genes.

C

■ Companion diagnostic drugs

Drugs for clinical testing used to predict the efficacy and side effects of drugs before using them for treatment, or for monitoring the effects of treatment, particularly test drugs developed at the same time as drugs for treatment.

■ Confirmed diagnosis

General confirmation by a physician of the nature and degree of a suspected disease via examination, medical history, and the results of clinical tests.

D

■ Digital PCR technology

A high-sensitive genetic detection technology that is expected to find applications to detect minute quantities of mutated cancer genes released into the blood.

E

■ Emulsion PCR

Emulsion PCR is a PCR variation that some NGS technologies use to replicate DNA sequences. It is

conducted on a bead surface within tiny water bubbles floating on an oil solution.

F

■ FISH testing

A technique that uses fluorescent material binding only specific genes to detect target genes within chromosomes.

■ Flow cytometry

Method involving the flow dispersion of minute particles and the use of laser light to optically analyze the minute flows. Used primarily to measure individual cells.

■ Flow FISH system

The flow FISH test system, designed for the detection of specific gene abnormalities in cells, can analyze stained cells by MI-FCM. Captured FISH cell images are shown on the display of the system.

G

■ Gene diagnostic panel

A type of assay that enables simultaneous analysis of the mutation, amplification and combination of multiple diagnostically important genes.

■ Genome

The minimum amount of genetic information common to all members of a species. Genes form the blueprint for an organism's makeup; a genome is the set of genes that carries the minimum amount of information necessary to construct a single organism.

H

■ HDL function

HDL is an acronym for high density lipoprotein, considered "good cholesterol." HDL function helps eliminate excessive cholesterol.

■ Healthcare testing (business sector)

Generic term for all testing in a healthcare context, including testing in hospital laboratories, POC testing, home testing, and preventative testing.

I

■ Imaging flow cytometry

Flow cytometry (FCM) is a method involving the flow dispersion of minute particles and the use of laser light to optically analyze minute flows. Used primarily to observe individual cells, imaging FCM is a proprietary Millipore technology that combines FCM for processing large quantities of cells with the rapid capture of images of cell morphology, fluorescent imaging and automated digital image analysis.

■ Immune checkpoint inhibitor

Cancer cells block the workings of the immune system and inhibit attacks by immune cells. This braking is called an immune checkpoint. An immune checkpoint inhibitor prevents this braking mechanism, activating immune cells' response to cancer cells.

■ Immune serum testing

Tests that check for the hepatitis virus or the appearance of specific proteins indicating the presence of cancer.

■ Infection

A disease caused by organisms that invade a living body through the mouth, skin or other transmission route and either propagate or generate toxins within the body. (This is a wider definition than "infectious disease".)

J

K

L

■ Liquid biopsy

Detection of cancer or other diseases by testing blood or other bodily fluids. This type of testing is less invasive than conventional physical biopsies.

M

■ Modular concept

Individual modules can be combined to create a diverse variety of product configurations. The series also allows for flexibility in testing throughput, increasing or reducing capacity in line with customer needs.

N

■ Next-generation sequencer

An analyzer capable of simultaneously reading large quantities of DNA bases and sequences that contain genetic information.

■ Non-laboratory clinical testing

Tests carried out directly on the body such as X-rays, electrocardiograms (ECGs), and electroencephalograms (EEGs).

O

P

■ PCR

A gene amplification technology for copying small quantities of DNA to produce larger quantities.

■ Personalized Medicine

Treatment designed to meet specific characteristics of an individual patient.

■ Plasma sequencing technology

This gene sequence analysis technology assigns a unique identifier to each DNA molecule, allowing each gene to be identified, and then amplifies the DNA, enabling a high degree of specificity and sensitivity. This technology features a lower error rate than general next-generation gene sequence analysis, allowing for highly sensitive multigene testing of liquid biopsy specimens.

■ Post genome

This refers to the search for useful genes and identification of their functions, and the identification of the differences in base sequences that give rise to variation among individuals. Progress in post genome research is expected to contribute to developments in medical technology such as "tailor-made therapies" produced according to an individual's particular sequence of bases.

■ **Primary care**

This refers to the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health needs, developing a sustained partnership with patients, and practicing in the context of family and community.

Q

R

■ **RAS gene**

A gene whose mutations are known to cause cancer.

■ **Regenerative medicine**

Regenerative medicine refers to the active use of cells to restore the function of structures or organs in the living body that have suffered functional damage or failure.

■ **Reagent**

A pharmaceutical product for medical use in laboratory testing, also called an in vitro diagnostic product. It is not used directly on the human body, but on blood or other bodily fluids sampled from the body.

■ **Risk diagnosis**

Tests that determine what types of disease a person may develop in future.

S

■ **SAKIGAKE Designation System**

A system giving priority to the consultation and review for regulatory approval of innovative drugs that satisfy designated conditions.

■ **Screening**

Screening is the process of between the normal and the abnormal. In laboratory testing, its purpose is to distinguish between items that require detailed investigation and those that do not.

■ **Sensitivity (includes explanation of anticancer drugs)**

Effectiveness of drugs on patients. Effects and efficacy of the same drug vary from patient to patient.

■ **Specimen**

Material necessary for testing. May include blood, cerebrospinal fluid, pus, punctured fluid, urine and feces. Also called test material.

T

■ **Tau proteins**

A type of protein. Substances that accumulate in nerve cells of the brain and are thought to cause Neurofibrillary tangle.

■ **Tumor marker**

Tumor markers are substances produced only by tumor cells that are detectable in urine and blood samples. The detection of these markers and measurement of their volume is used to aid cancer diagnosis and in assessing its clinical progress.

U

■ **Urinalysis/urine testing**

Urinalysis investigates whether sugar, protein, or blood is present in urine. It is used to check for the

presence of urinary tract stones, kidney function, and signs of diabetes.