



**Path to the healthy life
with trusted Global Clinical Laboratories**

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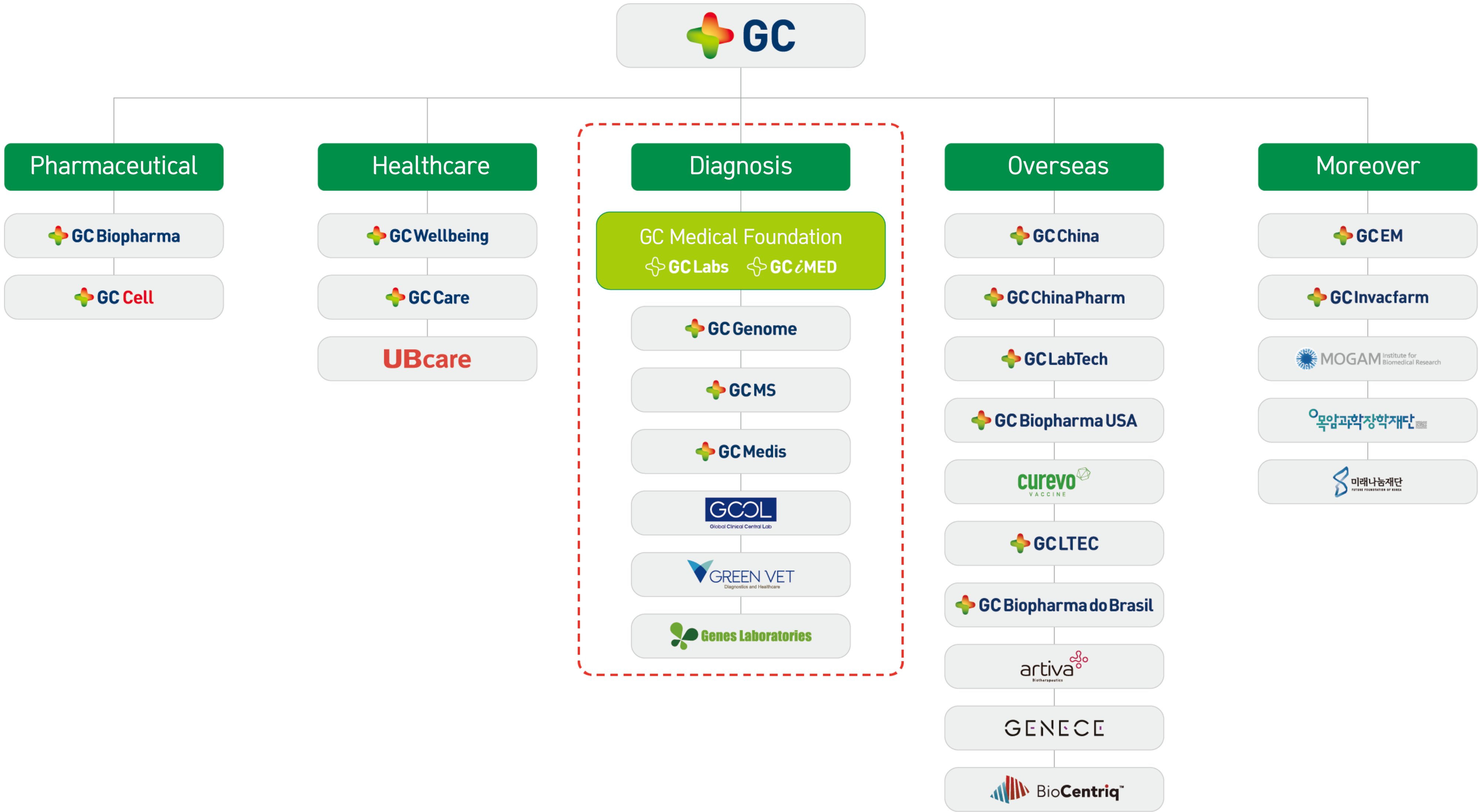


Introduction

GC Group Structure



GC established a healthcare value chain in Korea with core interests in the Therapeutics, Diagnostics, and Smart Healthcare



Introduction

Global Market Offerings

Tests by Specialty

GC Labs at a Glance



Distinctive No.1 in Korea focuses on the quality, volume, efficiency to provide satisfactory service to all clients

Introduction

GC Labs is a Korea’s leading clinical laboratory which provides clinical and anatomic pathology reference testing. GC Labs has enabled patients to receive accurate diagnosis and right treatment with unrivaled quality of routine and special clinical tests.

Global Market Offerings

Tests by Specialty



1st

commercial lab
established in Korea



USD 445M

2022 revenue
(2016~2022 CAGR 27%)



50+

medical doctors



5,000

clients including
hospitals and
reference labs



5,000+

test items



95M

tests per year

Why GC Labs



GC Labs provides innovative diagnostic testing with unparalleled performance

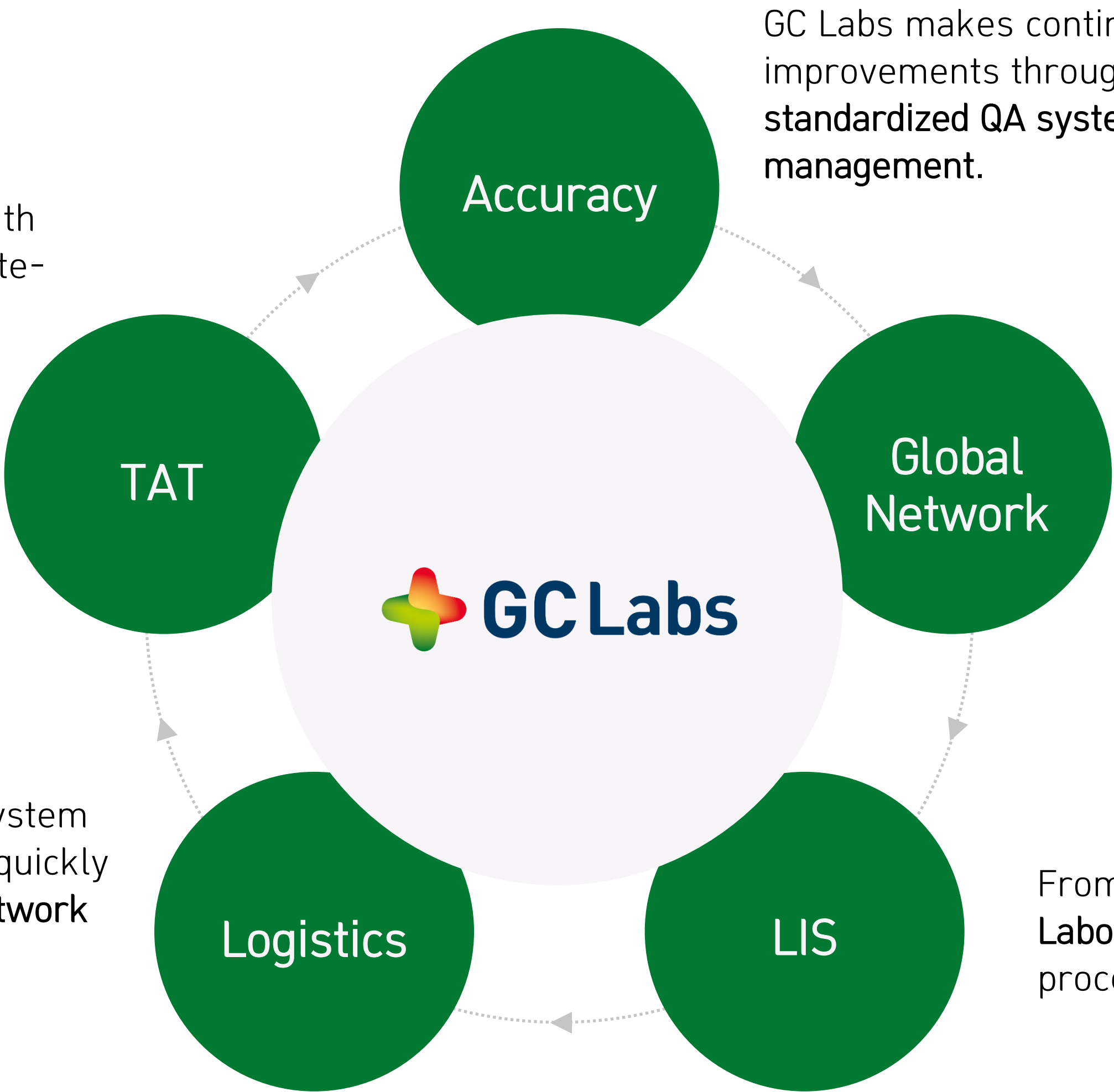
Introduction

GC Labs provides quick test results with **24/7 operation** of laboratory and a state-of-the-art total laboratory automation(TLA) system.

Global Market Offerings

Tests by Specialty

With systemized customs clearance system of Korea GC Labs transports samples quickly and safely through the **nation-wide network** and **cold-chain system**.



GC Labs makes continuous quality improvements through the **establishment of a standardized QA system** and **post-certification management**.

GC Labs is a **founding member** of **Global Diagnostics Network(GDN)**, which is composed of the world's leading diagnostics companies.

From ordering test to checking result **GC Labs' Laboratory Information System** makes all the process possible in one integrated solution.

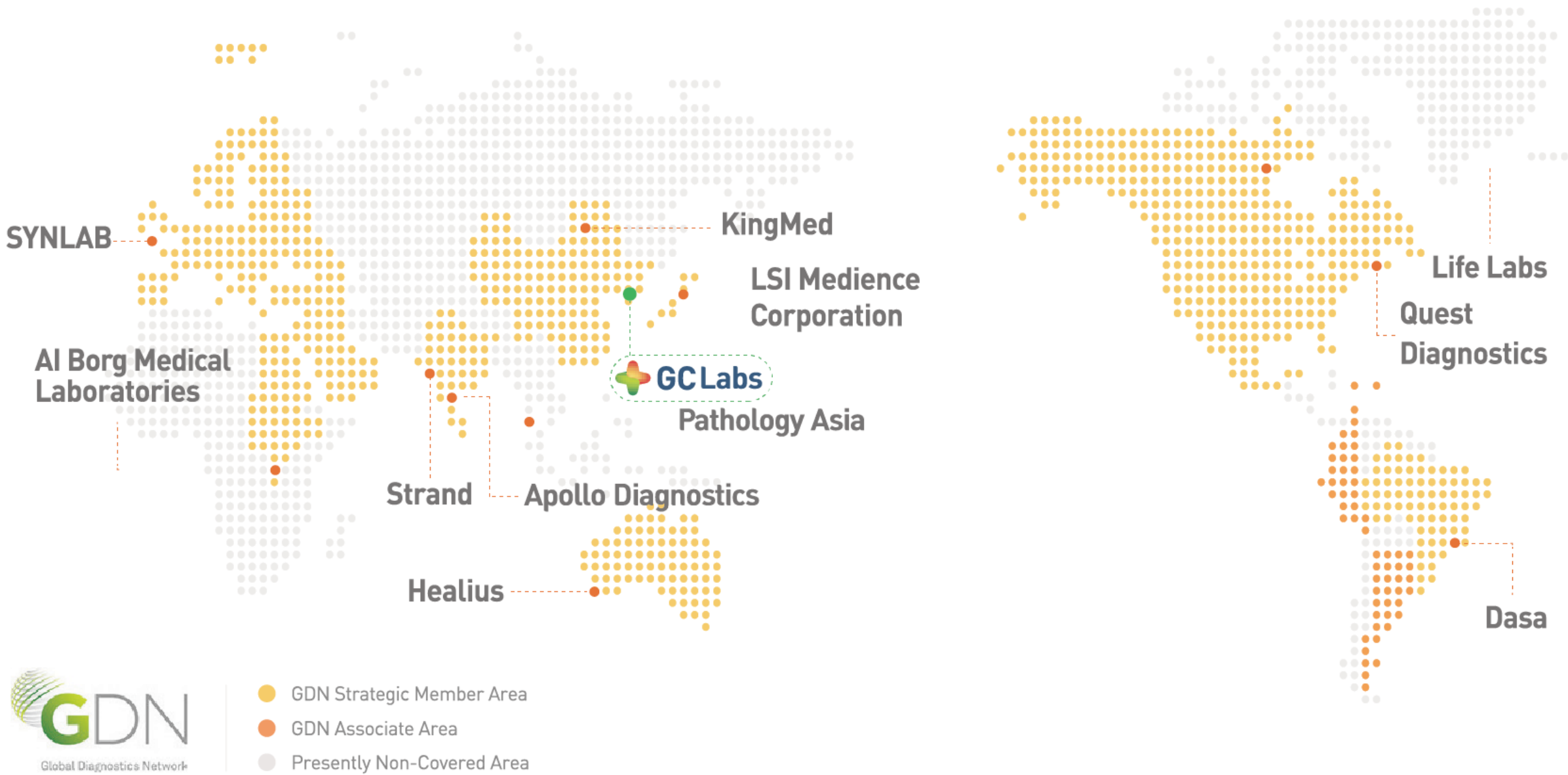
Global Diagnostics Network (GDN)



GC Labs is a founding member of the most well recognized Global Diagnostics Network

GDN is a strategic working group of diagnostic laboratories, each committed to unleashing and sharing local innovation to increase global access to diagnostic science and services.

1	GDN
75	countries
65%	of the world's population
300M	unique patients per year
30K+	collection points
2B	tests per year



Areas of Focus

- A global launch platform for therapies that require a companion diagnostic or benefit from a complementary diagnostic
- Creation of an emerging pathogen preparedness network to enable a rapid and proactive response to emerging infections around the world

Quality Management



By steady management of international accreditation, GC Labs speaks itself as a ‘Global’ laboratory

Introduction

Global Market Offerings

Tests by Specialty

Accreditation

CAP

- The College of American Pathologists Accreditation Certification

ISO 15189

- Medical Testing Laboratory Accreditation Certification

CDC NSQAP, HoSt, VDSCP, LSP

- Newborn Screening, Hormone, Vitamin D, Lipid

G-EQUAS

EDCs

DEQAS

Vitamin D

PCI

Heavy metals

QMEQAS

Heavy metals

RFB

Stone analysis

NGSP Level1

HbA1c

ISBER

DNA quantification and purity

Recognition of quality control by CDC



GC Labs is the first Korean clinical laboratory to obtain certification of standardization programs from the U.S. Centers for Disease Control and Prevention(CDC) for vitamin D and hormones(VDSCP & HoSt).



Global Market Offerings



Diagnostics Services

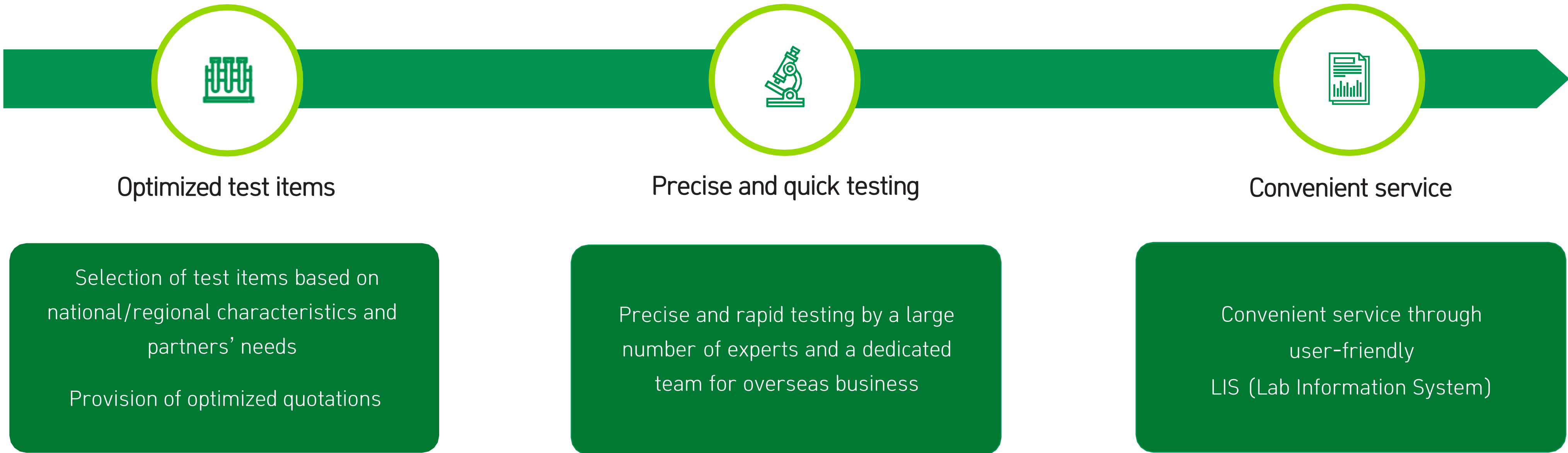


Provision of advanced testing service through GC Labs’ accumulated expertise and experience for 40+ years

GC Labs is being requested with a diverse range of test items from over 20 esteemed medical institutions across Asia, Middle East and Europe.

Benefits of collaboration with GC Labs

AUTOMATION UNIT / HEMATOLOGY / MICROBIOLOGY / MOLECULAR MICROBIOLOGY / TUBERCULOSIS / GENETICS / IMMUNOLOGY / ESAC (E-RESEARCH PROJECT, E-METABOLIC DISORDER, E-HAZARDOUS METABOLITE) / PATHOLOGY



Special features of Diagnostics Services



Besides tests under general lab medicine, GC Labs expands scope of services by focusing special test areas

Introduction

Global Market Offerings

Tests by Specialty

01. Occupational Health

Analyze **harmful agents** that workers may be exposed to in their working environment.

- **Occupational health examination**
 - Exposure to harmful agents
- **Pre-assignment medical examination**
 - Specific medical examinations
- **Occasional health examination**
 - Who exhibit symptoms suspected of
 - : occupational asthma
 - : dermatitis
 - : any other health problems
 - Who have medical findings in response to harmful agents
- **Temporary health examination**
 - Have subjective and/or objective symptoms of similar diseases
 - : workers serving in the same section or
 - : exposed to the same harmful agent
 - Any worker with abnormal findings

02. Integrated Functional Medicine Test

Aimed not only at **treating diseases**, but also, at assisting in the **strategic prevention of diseases**.

Organic Acid Profile	My Food Profile
Toxic & Nutritional Elements	Vitamin Tests
Amino Acid Profile	Coenzyme Q10
Environmental Pollutant Test	Endocrine Disrupting Chemicals I, II, III

Special features of Diagnostics Services



Besides tests under general lab medicine, GC Labs expands scope of services by focusing special test areas

Introduction

Global Market Offerings

Tests by Specialty

03. GC Wellness Screening

Provides an accurate, rapid diagnosis, and treatment with preceding **health checkup** service.

•**Adult package**

- 4 different packages testing up to 52 test items
- can find early diagnosis and prevention

•**Infant package**

- 2 different packages testing up to 40 test items
- necessary checkup during period of growth
- can find any early sign of diseases



04. Digital Pathology

Provides consultation of primary or second opinion under **numerous cases**

Workflow



Test registration
(GC Labs website)



Transfer of scanned image through software

- reduce shipment TAT
- no delay, damage, breakage of specimen

***Specimen transportation not required**



Streaming submitted images through software

***More than 20 Pathologists dedicated to providing a thorough interpretation**



Check result
(GC Labs website)

Lab Consulting



Provision of smooth workflow from base of construction, set-up of technology & IT system, manpower deployment

Introduction

Global Market Offerings

Tests by Specialty

Test equipment setting
& Accreditation



Providing GC Labs' know-how
& optimum guideline according
to form of construction

System(IT) setting



Embedding globally advanced LIS*,
provide efficient and safe system
to both patient and clinicians

*LIS – Lab Information System

Operation workflow



Planning manpower deployment
proposal accordingly & provide
optimum lab operation service by
monitoring whole flow of operation

Technical transfer

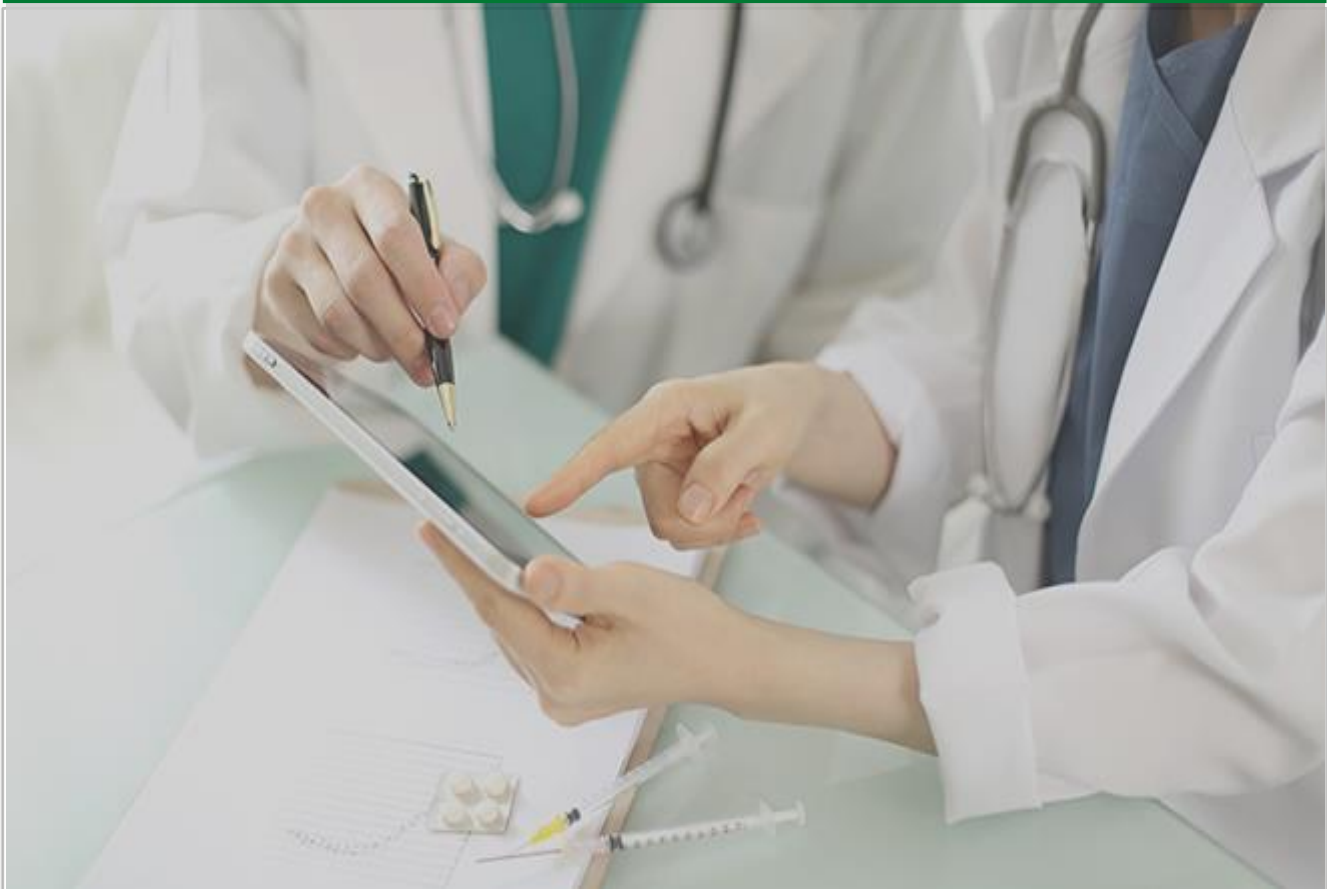
Provision of academic insights to enhance the quality of lab testing service and competitiveness in local market

Introduction

Global Market Offerings

Tests by Specialty

Outline business scope



Discuss a thorough program course with local client for training

- Setup of new test item
- Introduce new test equipment

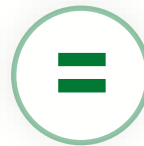


Tech-transfer of unique technology



Transfer technological capabilities to local employees

- Training, guide to set-up test equipment
- Fine tuning at partner's lab



Enhance quality of lab testing service



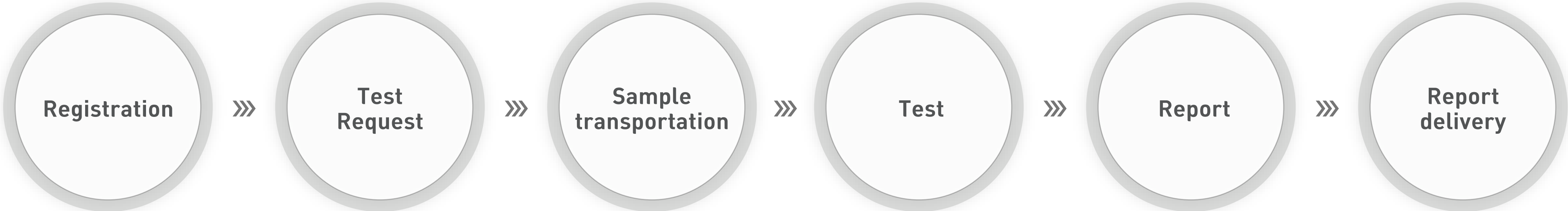
Expand local client's scope of testing and enhance long-term competitive edge

- Increase competitiveness (reduce TAT)
- Maximize revenue

IT API Integration

Simplify registration process by establishing LIS Integration Project for overseas send-out partners

Without manual intervention from the client side, an **API** is called to automatically submit test registration and receive the results. By this process client could **reduce time** and **human error rate** during registration

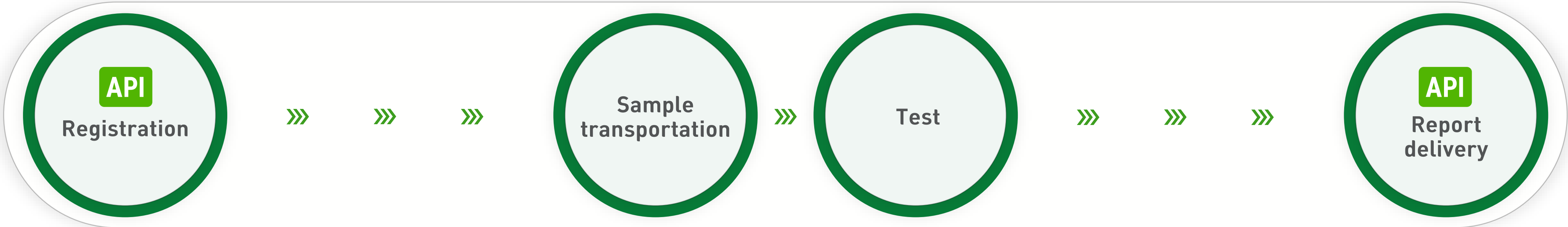


- List of patients' requests entered in overseas client's system
- **Login GC Labs website**
 - upload patient info.
 - register test item
- **Login GC Labs website**
 - check patient's result
- Print/deliver the reports to the patients

***API Integration**

No need to access GC Labs' website

*API | Application Programming Interface



Transmission of request info.
(Overseas client system → GC Labs system)

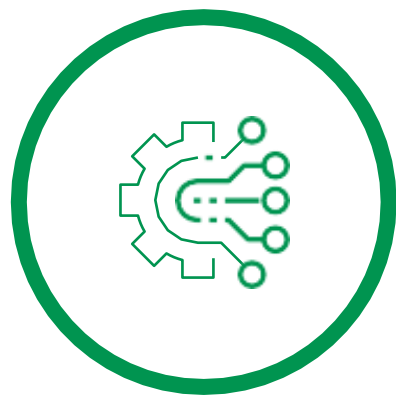
Receive result
(GC Labs system → Overseas client system)

Medical Health Check-up



Provision of a wide range of tests for Comprehensive Medical Check-up

Collaboration with GC i-MED Center, many of global patients visit to Korea to have Medical Health Check-up



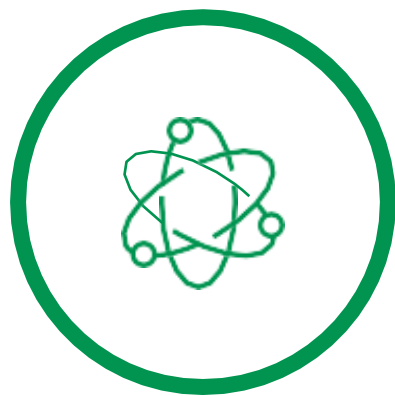
**Operating with
Stand-alone IT
system**

Developed our own HIS
(Hospital Information System)
to provide much faster
examine procedure for our
patient



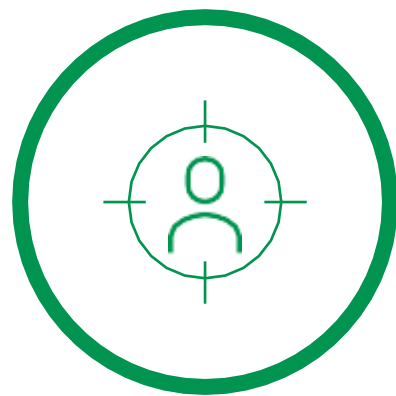
**Managing with
international standards
& Certificates**

Acquired various certification
of medical devices, patient's
information and emergency
response for patient-cored
management



**Highest quality
service**

Integrated with qualified
clinical test & high-tech
medical devices such as
128-channel CT, MRI 3.0



**Personalized
genetic testing**

Provision of cancer prevention
and personalized treatment
program through genetic and
pharmacogenetic tests



**Post-examination
care**

Included post-examination
care providing with
contracted general hospitals
in Korea to patients



Tests by Specialty



Human genetics

GC Labs clarifies human traits and therefore the treatment



- GC Labs provides a wide range of the test items, including hereditary diseases, somatic mutation, pharmacogenetics through various methods such as RT-PCR or FISH.
- GC Labs final reports present extensive and detailed interpretation considering the relevant test results.

Representative Tests	
Hereditary disease	APOE gene, Factor V Leiden R534Q, MTHFR, HLA-B27, HLA-B51
Somatic mutation	JAK2 V617F, BRAF V600E
Pharmacogenetics	CYP2C9, CYP2C19, TPMT
Chromosome analysis	Peripheral blood, Bone marrow, Amniotic fluid
FISH	BCR/ABL1, PML/RARA, Digeorge I CATCH22 del (22q11.2), Cri-du-chat syndrome del (5p)

Infectious disease

Prevention is possible through accurate diagnosis



Introduction

Global Market offerings

Tests by Specialty



Various types of infectious diseases

Molecular genetic testing helps early diagnosis of numerous infectious diseases, such as pneumonia, meningitis, gastroenteritis, STDs, and etc. GC Labs uses various methods such as real-time PCR in order to provide fast and multiplex diagnosis of viral or bacterial pathogens.

Dedicated tuberculosis diagnosis team

GC Labs’ independent tuberculosis diagnosis team prevents contamination of the lab environment and cross-contamination of samples by reducing the distance of sample transfer.

Microbiology Total Laboratory Automation System (WASPLab®)

GC Labs is a pioneer in the field of clinical microbiology, implementing microbiology TLA system, WASPLab. Microbiology TLA system enhanced workflow, increased accuracy by standardized streaking with robot arms and reduced TAT to 3 days for urine culture.

Representative Tests

- SARS-CoV-2+ influenza A&B + RSV (Multiplex real-time RT-PCR)
- Sexually Transmitted Diseases (STD) 6, 7, 12 & 13 types (Multiplex real-time PCR)
- Screening test for viral meningitis pathogens 5 & 7 types (Multiplex PCR)
- Human papillomavirus genotyping (Multiplex real-time PCR)
- Mycobacterium tuberculosis (Real-time PCR)
- Antimicrobial resistance

Endocrinology

Analyzing hormone levels with reference method



CDC HoSt

Hormone (Testosterone)
Standardization Program



CDC VDSCP

Vitamin D
Standardization Program

- GC Labs’ dedicated **endocrinology center** is specialized with highly specific and sensitive reference methods, mass spectrometry (MS). By investing constant time and funds, GC Labs will broaden the hormone test items with MS, aiming the world’s prominent endocrinology center.
- GC Labs has obtained **certification of standardization programs** for testosterone and Vitamin D by the Centers for Disease Control and Prevention(CDC). The acquisition of the global standardization certification proves the GC Labs’ accuracy and reliability with global compatibility.

Representative Tests

- | | |
|--------------------------------|-----------------------------------|
| • Somatomedin C, IGF-BP | • Estriol, AMH, FSH |
| • Thyroid hormone panel | • Testosterone |
| • Intact PTH & Calcium | • HVA, VMA, 5-HIAA |
| • Aldosterone & Renin activity | • Catecholamines 2 or 3 fractions |
| • Amylase isoenzyme, C-peptide | • Metanephrines 2 fractions |

Allergy

Precise sorting of allergens improves quality of your life



Introduction

Global Market Offerings

Tests by Specialty



- GC Labs provides **economic efficiency** by covering maximum variety of allergen tests with limited volume of specimen.
- GC Labs offers a comprehensive range of allergy tests to meet the full spectrum of patients’ needs, where **MAST and ImmunoCAP** equipment are used to conduct the most varied tests; 108 different allergens at once through MAST and more than 200 individual antigens through ImmunoCAP.
- After screening with MAST for **108 allergens**, you can narrow down the suspected allergen and order ImmunoCAP for confirming.

Representative Tests	
Food allergens	Egg white, Cow’s milk, Wheat IgG, Peanut, Shrimp, etc.
Inhalant allergens	House dust, Pollens, White oak, Pine, etc.
Insect and Venom allergens	Honeybee venom, Moth, Mosquito, Cockroach, etc.
Biologics and occupational allergens	Methylene diphenyl diisocyanate, Ethylene oxide, Latex, Maleic anhydride, etc.
Animal allergens	Cat/Dog dander, Mouse epithelium, Pigeon feathers, etc.

Toxicology

More than delivering numbers, striving to help healing



- GC Labs uses state-of-the-art equipment and methodologies with **ICP-MS, LC-MS, and GC-MS** to screen, detect, and monitor excessive exposure to heavy metals, trace elements, organic compounds and drug misuse.
- The detection is possible with blood, urine or hair
- GC Labs provides various ranges of materials such proper therapeutic range and trough level.

Representative Tests	
Heavy metals	As, Pb, Hg, Cd, Al, Cr, Co, Ni, In, Sb, V
Trace elements	Zn, Cu, Se, Mn, Mo
Drugs	Cocaine, Opiates, Methamphetamine, Heroin, TBPE Cyclosporine Tacrolimus, Methotrexate, Theophylline, Lithium, etc.
Organic compounds	1,2-Dichloropropane, 2,5-Hexanedione, Muconic acid, N-Methylacetamide, o-Cresol, Trichloroacetic acid, Methylhippuric acid, Mandelic acid, Phenylglyoxylic acid, Phenol

Endocrine-Disrupting Chemicals, EDCs



To detect and monitor excessive exposure to EDCs



- **Endocrine-disrupting chemicals (EDCs)** are exogenous chemicals that mimic, block, or disrupt the normal function of hormones.
- Epidemiologic studies suggest that the rise in diabetes, cancer, and infertility in the past two to three decades could be attributable, at least in part, to exposure to EDCs.
- GC Labs uses state-of-the-art equipment and methodologies with **LC-MS** to screen, detect, and monitor excessive exposure to EDCs.
- The detection is possible with blood, urine.

Representative Tests	
Bisphenols & Parabens	Bisphenol A, Bisphenol F, Bisphenol S Methylparaben, Ethylparaben, Propylparaben, Butylparaben
Perfluorinated compounds	Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS)
Phthalates	MMP, MEP, MiBP, MnBP, MBzP, MEHP, MEHHP, MEOHP, MECPP

Hematology & Transfusion medicine



Testing for the various steps of hematologic diseases

Introduction

Global Market Offerings

Tests by Specialty

- GC Labs’ wide spectrum of hematology tests cover from general hematologic tests (CBC and PB morphology, coagulation test) to special hematologic tests (Bone marrow morphology and special stains, lymphocyte subset, leukemia/lymphoma immunophenotyping, PNH study using flow cytometry).
- GC Labs experts provide the integrated interpretation of test result, combining the various tests.

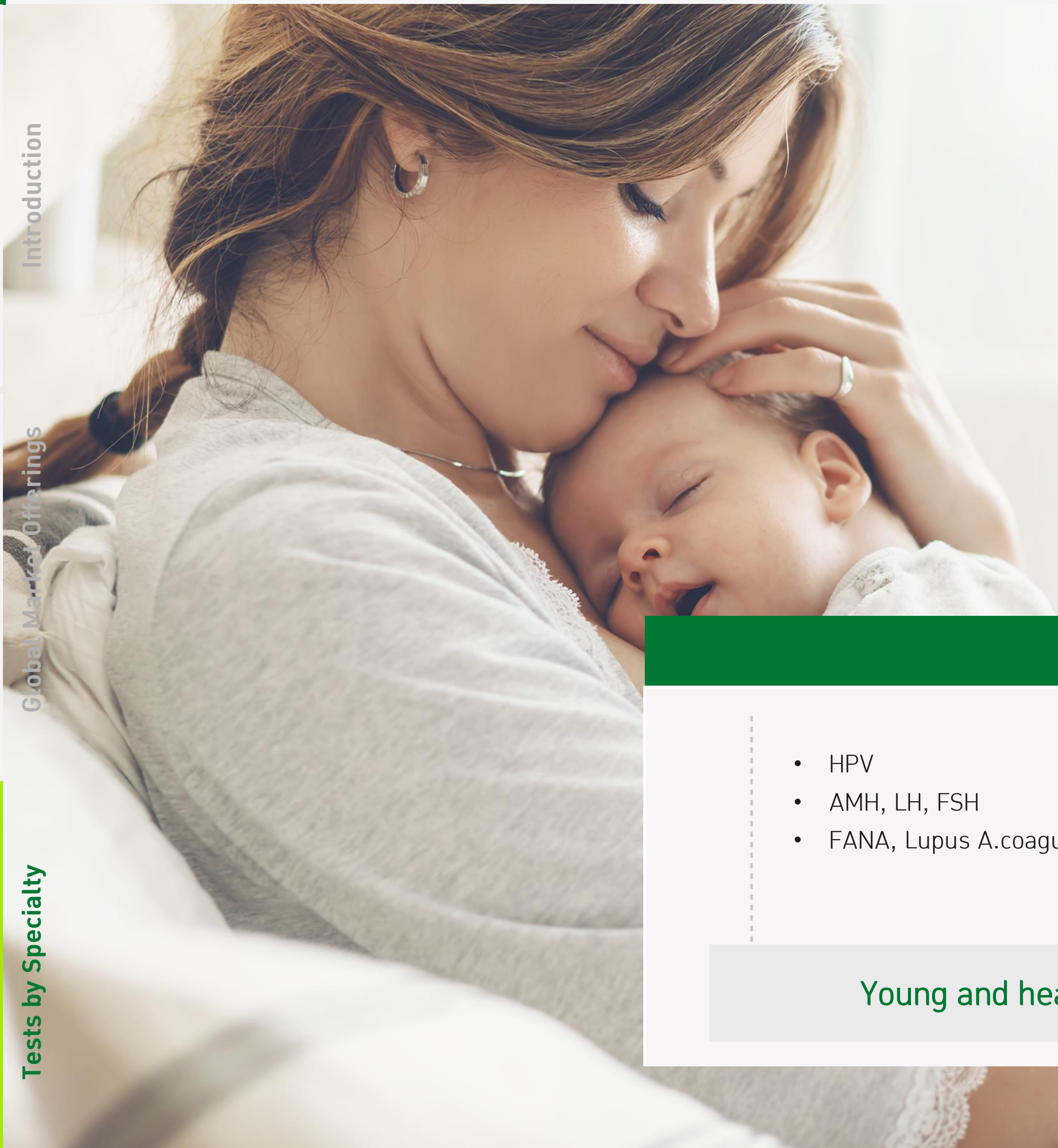
Representative Tests

- Leukemia / Lymphoma immunophenotyping
- Lymphocytes subset (helper T cell, suppressor T cell, B cell, NK cell, NK cell including NK cell subset)
- PNH study
- Pretransfusion testings (ABO, RH typing, Ab screening test)

Women's health



For every step of women's life, GC Labs always be your side



Introduction

Global Market Offerings

Tests by Specialty

- For every step of women's life,
- **When young and healthy** – GC Labs helps women enjoy healthy daily life and make a reasonable life plan
- **For mother and baby** – can predict diseases that may occur in fetuses or babies.
- **As women getting older** – to ensure healthy life, it is important to monitor unexpected threat such as cancers. GC Labs finds risk factor in advance and helps women to sustain the best quality of life.

Representative Tests

- HPV
- AMH, LH, FSH
- FANA, Lupus A.coagulant

- Thalassemia
- Maternal serum screening test
- (Quad & Integrated test)
- Newborn Screening Test (82 types)
- Lysosomal Storage Diseases (LSD)
- sFlt-1/PlGF ratio, PAPP-A MTHFR

- ROMA
- P1NP
- CTx
- PTH
- Vitamin D

Young and healthy

Fertility & Pregnancy

Getting older



Introduction

Global Market Offerings

Tests by Specialty

Cardio-Metabolics

For long-lasting healthy life



Data-based Diagnostic & Research Study

- As newly developed biomarkers for cardiometabolic diseases emerge, GC Labs are keen to provide them promptly.
- GC Labs’ experts in clinical laboratories provide recommendation for the choice of tests.

Representative Tests
• Whole blood viscosity test (Scanning capillary method or Cone Plate Rotational Method)
• Cholesterol studies including small dense LDL
• LP-PLA2 (Lipoprotein-associate phospholipase A2)
• NT-Pro BNP (N-terminal probrain natriuretic peptide)
• Diabetes: Anti-GAD Ab, Insulin Ab

Pathology

Primary/Secondary opinion under Digital pathology



Introduction

Global Market Offerings

Tests by Specialty

- Antibody for Immunostaining : holds one of the **highest no. of antibodies** among clinical laboratories in Korea
- Primary report or second opinion under **Digital pathology** consulting service - DP 600 Slide Scanner

Representative Tests	
Immunohistochemical stains	More than 90 stains
Special stains	AFB, Alcian blue, Congo red, D-PAS, Giemsa, GMS, Iron, Masson’s Trichrome, PAS, Reticulin, Verhoeff’s-Van Giewon
Molecular pathology (FISH)	ALK FISH, HER2 FISH, MDM2 FISH
Histopathology	Paraffin blocks (1~2 / 3~5 / 6~10 / 11 or more)
Digital pathology	Primary/secondary opinion