



Making improvements in life possible

Investor resource book

September 2023



Forward looking and intended use statements



Safe Harbor Statement: This presentation contains both historical and forward-looking statements. All statements other than statements of historical fact are, or may be deemed to be forward looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended. These statements are based on current expectations of future events. If underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results could vary materially from our own expectations and projections. Some of the factors that could cause actual results to differ include, but are not limited, to the following: general industry conditions and competition; risks associated with managing growth and international operations (including the effects of currency fluctuations, regulatory processes and dependence on logistics), variability of operating results and allocations between customer classes, and the commercial development of markets for our products to customers in academia, pharma, applied testing and molecular diagnostics; changing relationships with customers, suppliers and strategic partners; competition; rapid or unexpected changes in technologies; fluctuations in demand for QIAGEN's products (including factors such as general economic conditions, the level and timing of customers' funding, budgets and other factors); our ability to obtain regulatory approval of our products; technological advances of our competitors and related legal disputes; difficulties in successfully adapting QIAGEN's products to integrated solutions and producing such products; the ability of QIAGEN to identify and develop new products and to differentiate and protect our products from competitor products; market acceptance of QIAGEN's new products and the integration of acquired technologies and businesses. For further information, please refer to "Risk Factors" section of reports that QIAGEN has filed with, or furnished to, the U.S. Securities and Exchange Commission (SEC). We undertake no obligation, and do not intend, to update these forward-looking statements as a result of new information or future events or developments unless and to the extent required by law.

Regulation G: QIAGEN reports adjusted results, as well as results on a constant exchange rate (CER) basis, and other non-U.S. GAAP figures (generally accepted accounting principles), to provide additional insight on performance. In this presentation, adjusted results include adjusted net sales, adjusted gross income, adjusted net income, adjusted gross profit, adjusted operating expenses, adjusted operating income, adjusted operating margin, adjusted net income before taxes, adjusted income tax, adjusted tax rate, adjusted EBITDA, adjusted EPS, adjusted diluted EPS and free cash flow. Adjusted results are non-GAAP financial measures QIAGEN believes should be considered in addition to reported results prepared in accordance with GAAP but should not be considered as a substitute. QIAGEN believes certain items should be excluded from adjusted results when they are outside of its ongoing core operations, vary significantly from period to period, or affect the comparability of results with its competitors and its own prior periods. Please see the Appendix provided in this presentation "Reconciliation of Non-GAAP to GAAP Measures" for reconciliations of historical non-GAAP measures to comparable GAAP measures and the definitions of terms used in the presentation. QIAGEN does not reconcile forward-looking non-GAAP financial measures to the corresponding GAAP measures due to the high variability and difficulty in making accurate forecasts and projections that are impacted by future decisions and actions. Accordingly, reconciliations of these forward-looking non-GAAP financial measures to the corresponding GAAP measures are not available without unreasonable effort. However, the actual amounts of these excluded items will have a significant impact on QIAGEN's GAAP results.

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We help advance
science and improve outcomes



Our Mission

**Enabling access to
valuable insights from
molecular research
to clinical healthcare**

Our Vision

**Making improvements
in life possible**

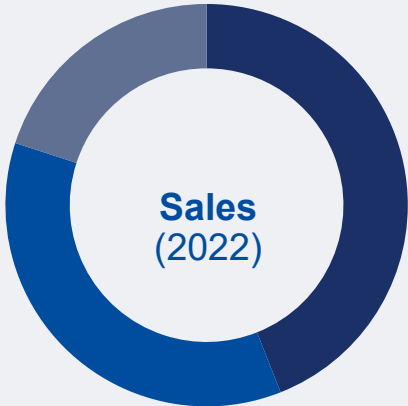
QIAGEN at a glance



A global company with scale

\$2.1 billion
(2022 sales)

QGEN
LISTED
NYSE
DAX
TecDAX



~45%
Americas

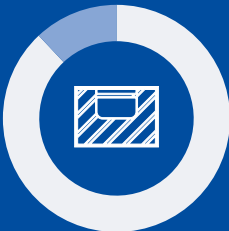
~35%
EMEA

~20%
Asia-Pacific / Japan



~6,200
employees known as QIAGENers

Highly recurring revenues



~88%
Consumables
and related
revenues



~12%
Instruments

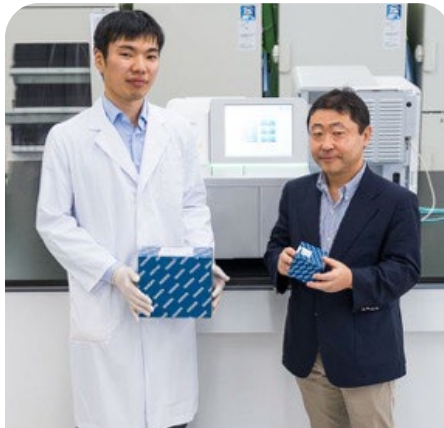
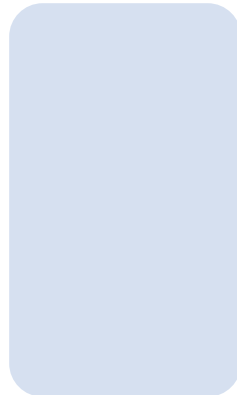
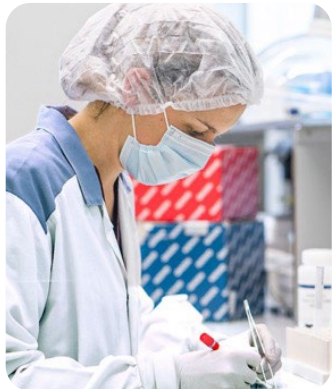
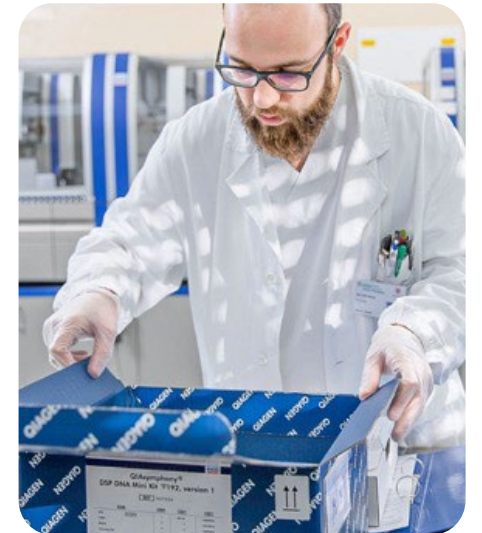
Balanced customer markets

~50%
Molecular
Diagnostics

~50%
Life
Sciences

>500,000
customers worldwide

QIAGEN solutions are used across the world by researchers - from young scientists to Nobel laureates - and clinical testing labs



More than
3 billion
samples have
been processed
using QIAGEN
sample
preparation kits



Dr. Darren Choonea

Research Scientist, London Natural History Museum

Uses QIAGEN's **PowerSoil Pro Kit** to explore the evolution of microorganisms as they adapted to changing environmental conditions and identify the genes that contributed to their survival

More than 100 million
patients have been
screened with
QIAGEN's latent TB test



Dr. Kiyoyasu Fukushima

Japan Red Cross Nagasaki Genbaku Isahaya Hospital

Employs **QuantiFERON TB Plus** for latent
tuberculosis detection to ultimately reduce Japan's
high infection rate



A man and a woman, both wearing white lab coats, are leaning over a black table in a laboratory. They are looking at a laptop screen. The man is on the left, and the woman is on the right. The background shows laboratory shelves with various bottles and equipment. The lighting is bright, coming from overhead fluorescent lights.

More than 4 million
samples have
been processed
with QIAGEN's
NGS kits



Asha Palat and Brandon Mistretta

University of Houston's Department of Biology and Biochemistry

Use QIAGEN's **QIAseq FastSelect RNA Removal Kits** with next-generation sequencing (NGS) to develop more effective and more humane cancer therapies.

QIAGEN is
developing
companion
diagnostics
with over 25
Pharma
companies

Dr. Philippe Taniere

Consultant histopathologist
Queen Elizabeth Hospital Birmingham

Relies on QIAGEN's standardized, regulatory- approved
tests for KRAS, BRAF and EGFR to break the cellular code
of cancer and find the right treatment for each patient

Every 10 seconds
a crime scene
sample is
analyzed with
QIAGEN kits

CRIME SCENE DO NOT CROSS

Rachel Oefelein

Chief Scientific Officer at DNA Labs International

Helping to bring closure to victims and their families by using QIAGEN's **forensic genetic genealogy tools** to enable identification of assailants by matching genetic relatives

QIAGEN's
innovative
instrument
portfolio tackles
a variety of
molecular
applications



Dr. Johanna Andersson-Assarsson

University of Gothenburg

Uses QIAGEN's **QIAcuity digital PCR platform** to identify obesity gene variations that could help in the development of new therapies

A white QIAGEN product box with a red stripe and the word "QUALITY" printed on it. The box is placed on a blue surface with the QIAGEN logo repeated in white.

**QIAGEN products
are known for the
highest quality**

Investing in R&D
and best-in-class
manufacturing is
a top priority

Providing Sample to Insight solutions to uncover molecular insights faster, better and more efficiently



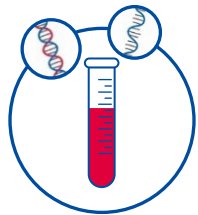
Sample technologies



Assay technologies



Sample to Insight solutions



Biological
sample

Automation systems



Bioinformatics



Valuable
molecular
insights



Discovery research
Advancing understanding of life



Pharma
Faster and better drug R&D



Clinical diagnostics
Accurate disease diagnosis



Companion Diagnostics
Better precision medicine



Human Identification
Improving public safety



We are helping over
500,000
customers
to unlock molecular
insights



Life sciences: Working to enable scientific advancements



Academic research



Pharma development



Applied testing



QIAGEN value

2022 sales
~\$1 billion

Recognized innovator
supporting scientific
breakthroughs

Able to translate innovations
into commercial products

~\$5 billion
addressable market

Selected QIAGEN products

Sample technologies

~300 consumables kits
for processing:

- Tissue, blood, bone, cells, plants, soil, microbiome, other

Assay technologies

- Real-time PCR enzymes and panels
- QIAcuity digital PCR kits
- QIAseq Next-Generation Sequencing kits

Instruments

- QIA Symphony
- QIAcube Connect
- EZ2 Connect
- QIAcuity digital PCR
- RotorGene Q

Bioinformatics

- Ingenuity Pathway Analysis (IPA)
- CLC Genomics Workbench
 - Microbial Genomics
 - Metagenomics
 - Single Cell Genomics

Molecular Diagnostics: Helping to improve outcomes in healthcare



Immune response



Infectious diseases



Oncology



QIAGEN value

2022 sales
~\$1.1 billion

Addressing testing areas
with high or growing demand

Strong automation portfolio
with multi-year assay menu
expansion underway

~\$6 billion
addressable market

Selected QIAGEN products

Sample technologies

In vitro diagnostic approved kits
for processing:

- Tissue
- Blood and other body fluids
- Liquid biopsies

Assay technologies

Indication areas:

- Oncology
- Immune response
- Infectious diseases

Instruments

- QIAstat-Dx
- NeuMoDx
- QIASymphony RGQ
- EZ2 Connect

Bioinformatics

QIAGEN Clinical Insight (QCI)

- Hereditary diseases
- Translational
- Oncology

Our Strategy: Leveraging a strong core portfolio to drive Pillars of Growth



Pillars of Growth

Expanding on solid leadership

Sample technologies

Comprehensive portfolio

QuantiFERON

Leading immune response monitoring (incl. TB)

Early commercialization phases with strong growth potential

QIAstat-Dx

Syndromic testing with unrivaled ease of use

NeuMoDx

Differentiated microfluidic integrated PCR testing

QIAcuity

Novel microplate digital PCR

2022 sales

Sample technologies	Diagnostic solutions	PCR / Nucleic acid amplification	NGS / Genomics
~\$845 m	~\$690 m	~\$400 m	~\$235 m

Core portfolios

Microbiome

Liquid Biopsy

HID / Forensics

Immune response

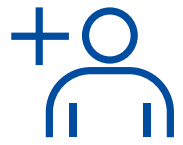
Infectious diseases

Oncology / Precision Medicine

OEM Reagents

Universal NGS solutions

QIAGEN Digital Insights



We employ
~6,200

passionate QIAGENers
around the world from
diverse backgrounds
and locations

Our strong global presence serves both developed and emerging markets



Our global
and regional
headquarters:

Direct sales in
>30
countries

Germantown
Maryland
Americas HQ

Venlo
Netherlands
Global HQ

Hilden
Germany
EMEA HQ

Shanghai
China HQ

Singapore
Asia-Pacific HQ

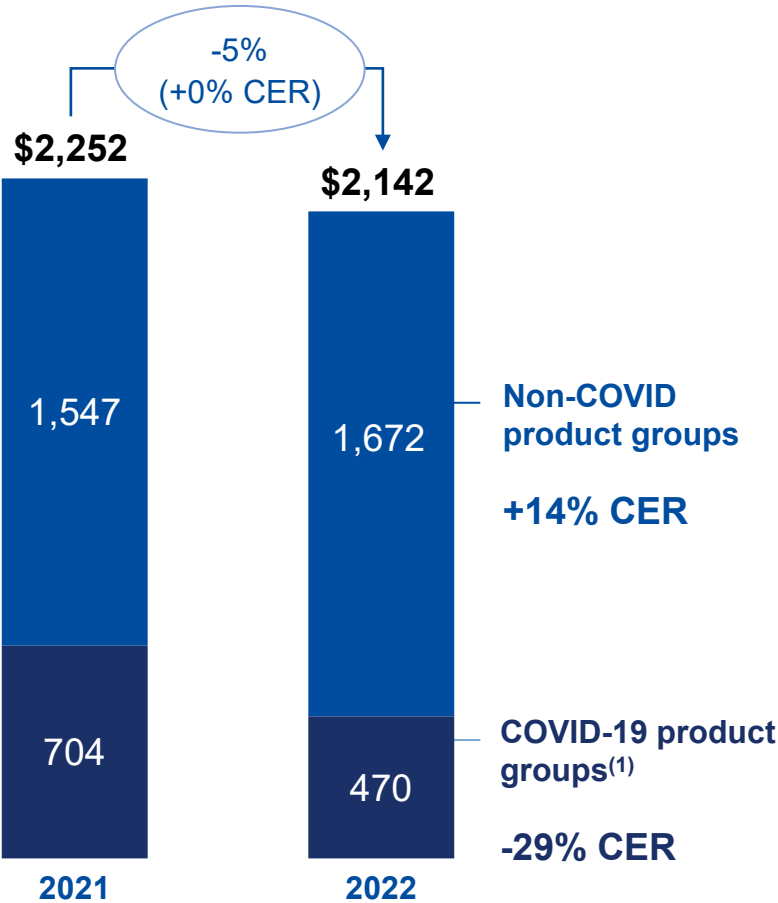
Shipping product to
>170
countries

FY 2022: +14% CER growth in non-COVID product groups



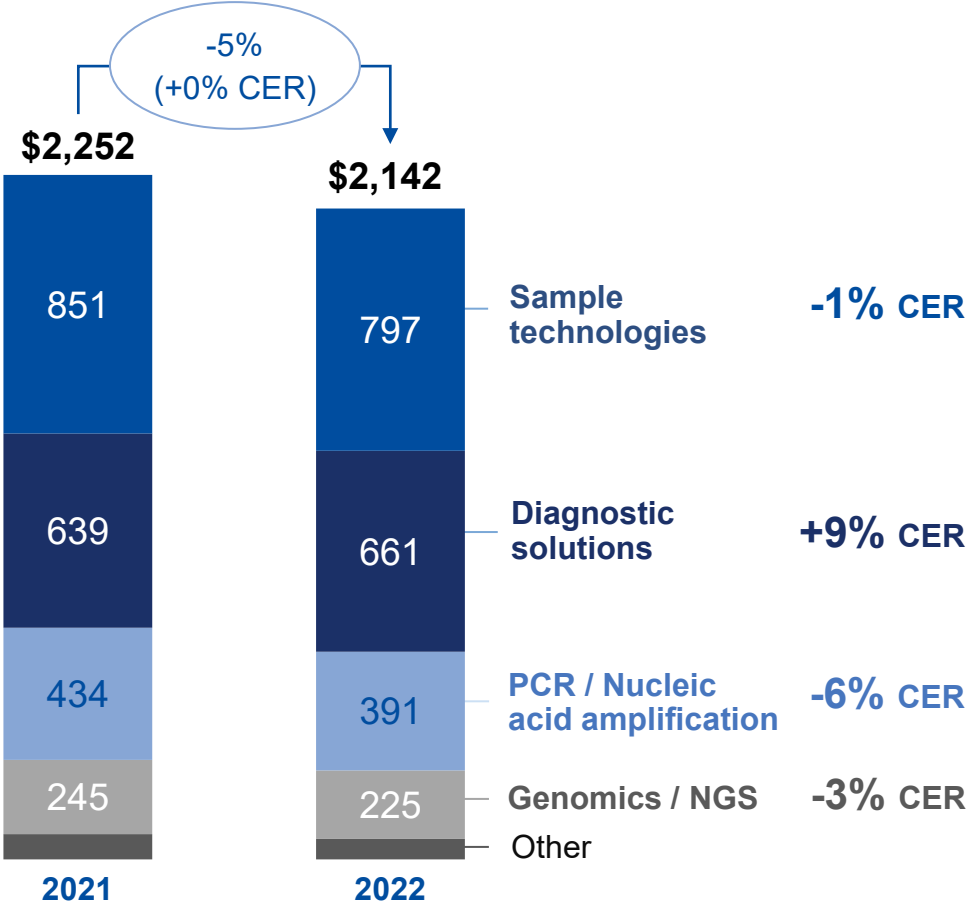
Non-COVID / COVID split

(In \$ millions at actual rates)



By product group

(In \$ millions at actual rates)



1) Baseline from 2019 of ~\$150 m sales in COVID-19 product groups for products with versatile RNA processing and analytics applications. Growth rates vs. FY 2021. | Refer to appendix for product group growth at actual rates. | Tables may contain rounding differences.

Outlook: Q3 and FY 2023



Net sales

Anticipated currency impact

Adjusted diluted EPS

Anticipated currency impact

Adjusted tax rate

Shares outstanding⁽¹⁾

Q3 2023 outlook

≥ \$465 million CER

Up to ~1 percentage point benefit

≥ \$0.48 CER

Neutral FX impact

~17-18%

~231 million

Updated FY 2023 outlook

(As of August 8, 2023)

≥ \$1.97 billion CER

Neutral FX impact
(Prior ≥ \$2.05 billion CER)

≥ \$2.07 CER

Neutral FX impact
(Prior ≥ \$2.10 CER)

~18%

~231 million

1) Based on \$50.00 share price | Based on exchange rates as of August 4, 2023. | CER - Constant Exchange Rates

FY 2022: Leveraging strong cash flow to build sustainable growth



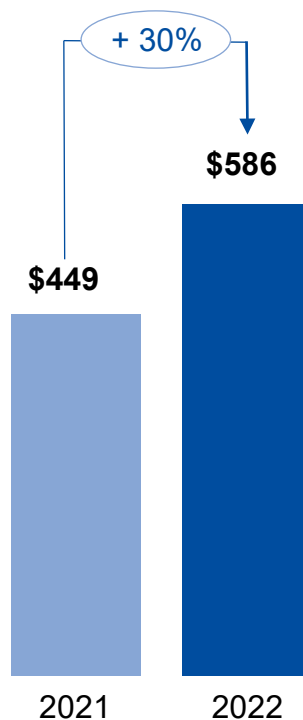
Operating cash flow

(In \$ millions)



Free cash flow

(In \$ millions)



Targeted investments into five pillars

High level of R&D investments into menu expansion for QIAstat-Dx, NeuMoDx and QIAcuity



Proactively addressing macro trends

Maintaining flexibility in operational expenses while managing increasing costs



Strong balance sheet

Solid cash levels to support capital deployment through bold-on M&A and buybacks

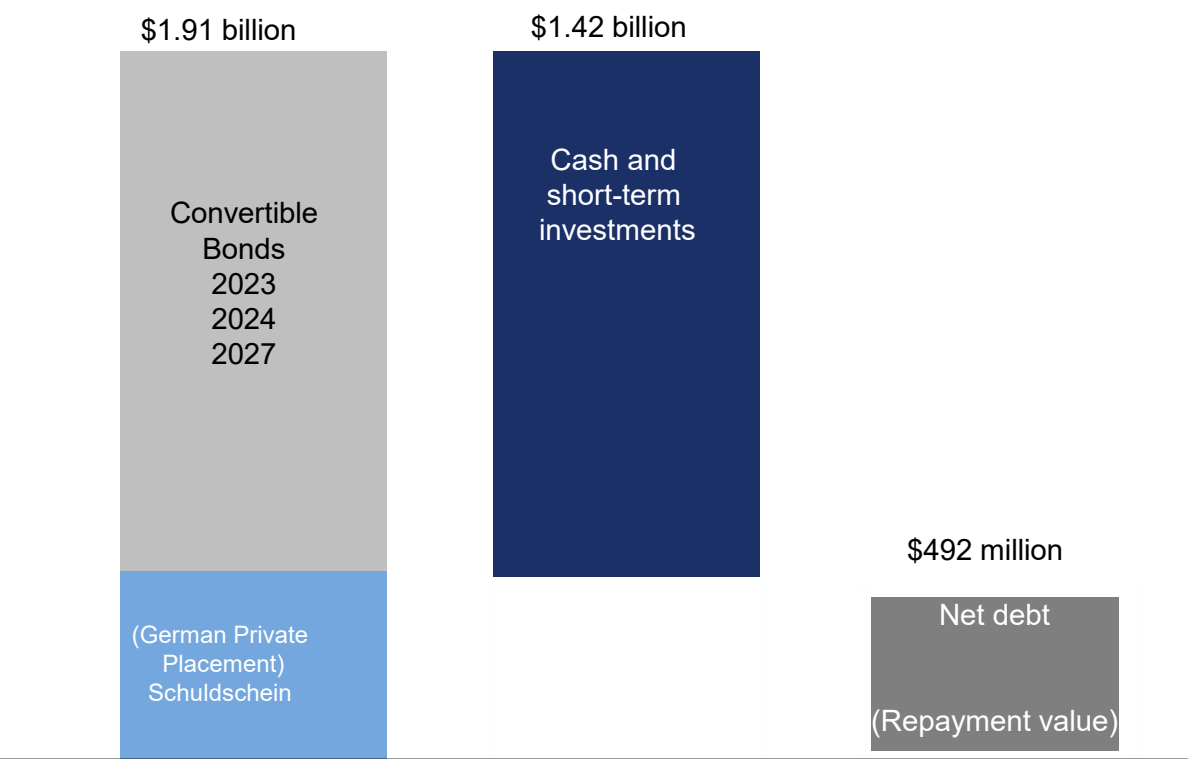


Refer to appendix for reconciliation of reported to adjusted figures.

Maintaining financial flexibility with appropriate leverage



Structure as of December 31, 2022

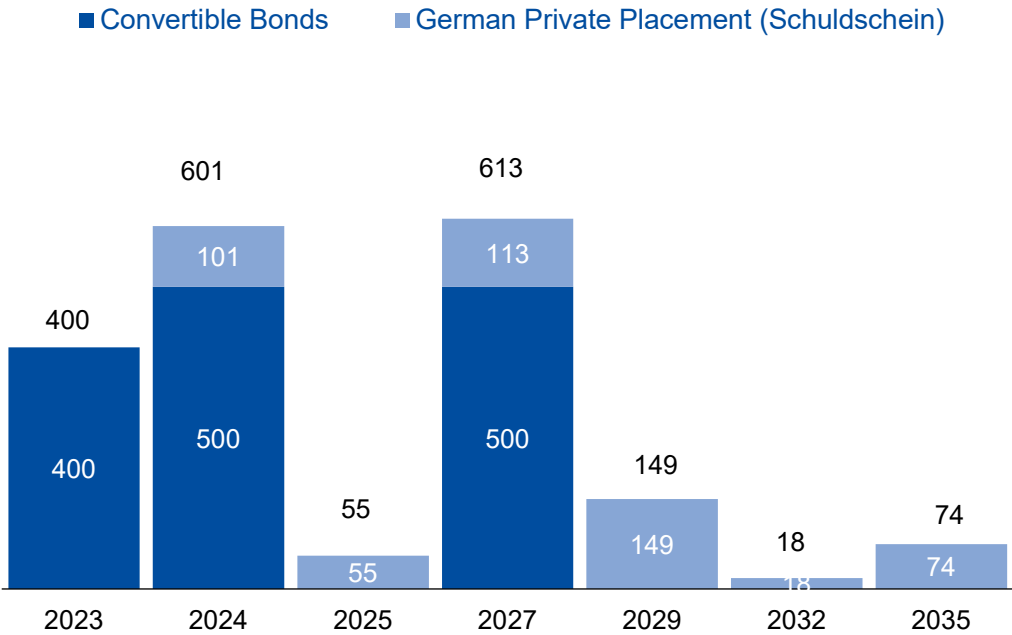


Convertible notes (~\$1.400 bn):
\$400 m 0.500% due 2023 (\$49.98 effective conversion price)
\$500 m 1.000% due 2024 (\$50.29 effective conversion price)
\$500 m 0.000% due 2027 (\$80.72 effective conversion price)

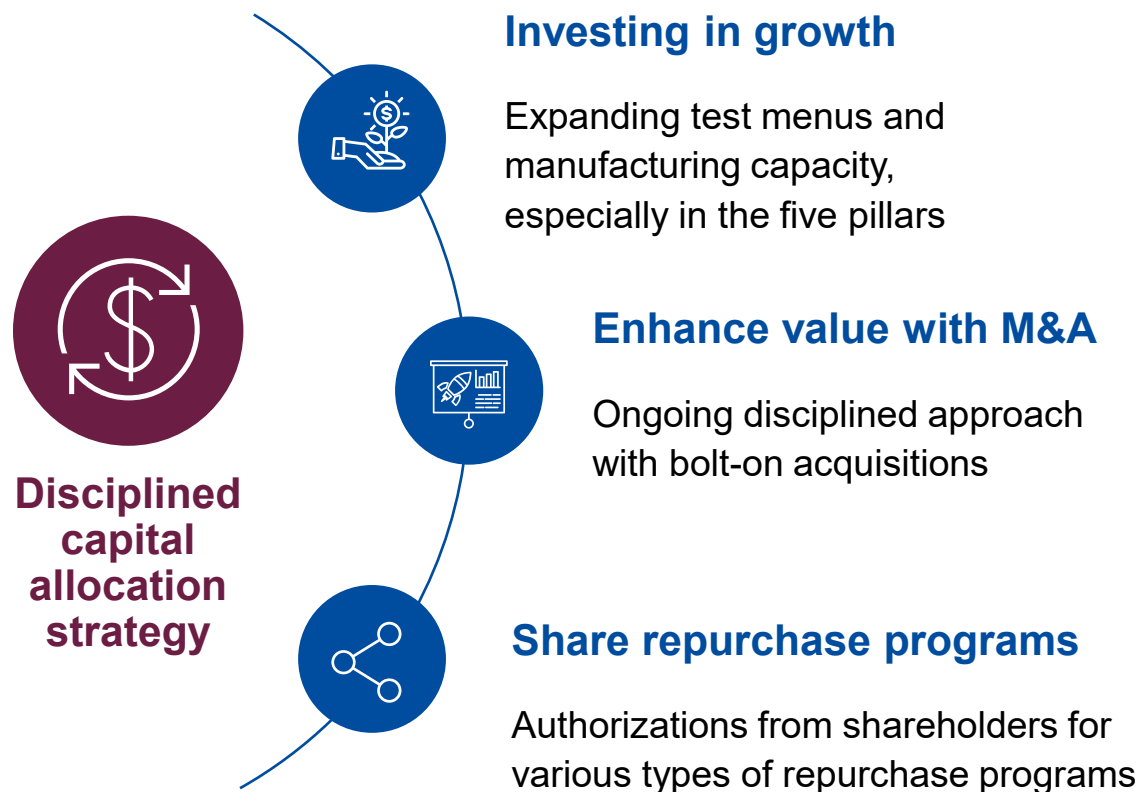
Schuldscheindarlehen (German debt) (~\$510 m):
€95.0 m due 2024 (fix 1.09%, floating 6m EURIBOR+0.70%)
€51.5 m due 2025 (floating 6m EURIBOR+0.55%)
€106.0 m due 2027 (fix 1.61%; fix 2.74%; floating 6m EURIBOR+0.70%)
€140.0 m due 2029 (fix 3.04%; floating 6m EURIBOR+0.85%)
€17.0 m due 2032 (fix 3.39%; floating 6m EURIBOR+1.00%)
€70.0 m due 2035 (fix 3.04%)

Maturities of debt instruments

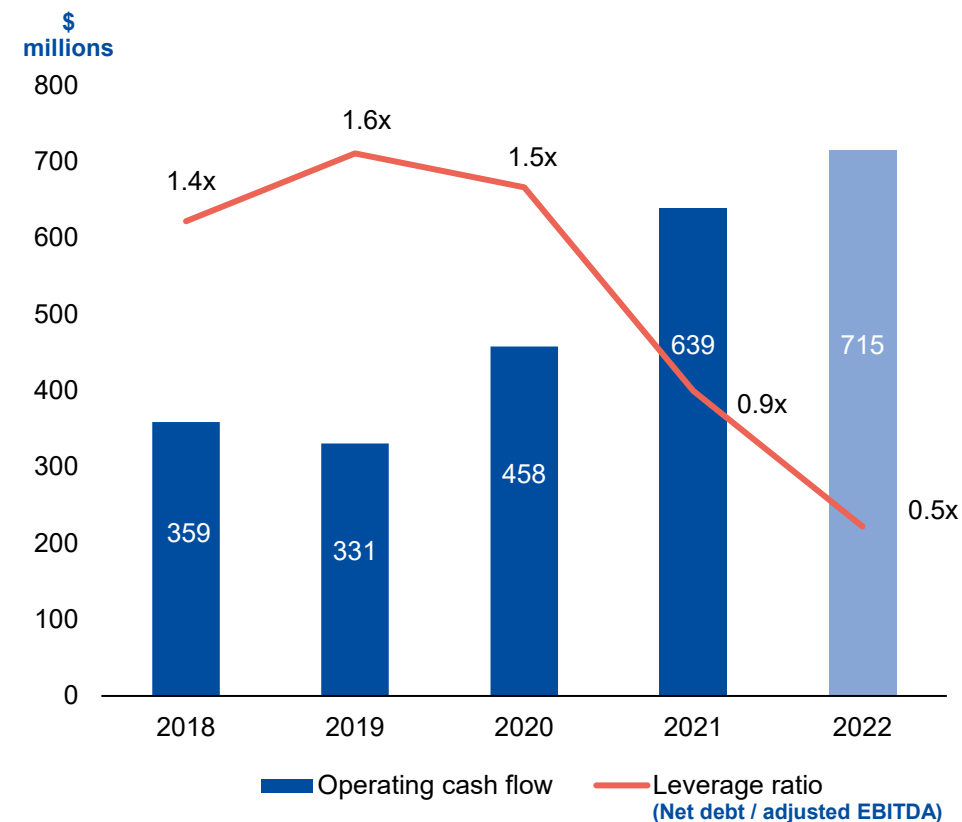
(In \$ millions)



Capital allocation: Strong balance sheet to create greater value



Healthy cash flow and leverage ratio trends

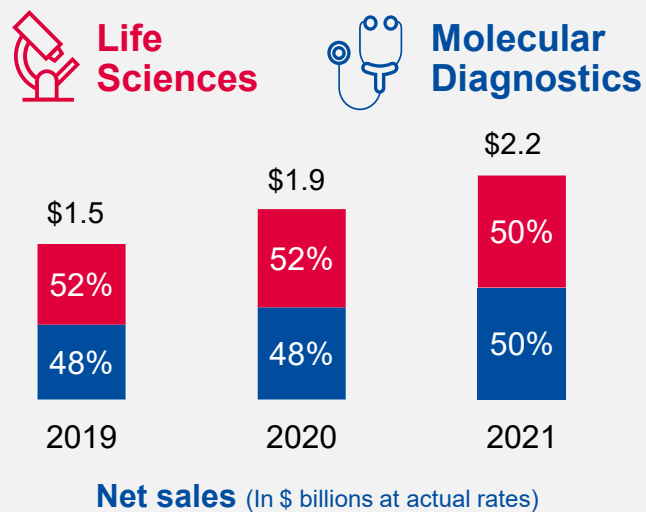


Why invest: Well-diversified business spanning attractive markets



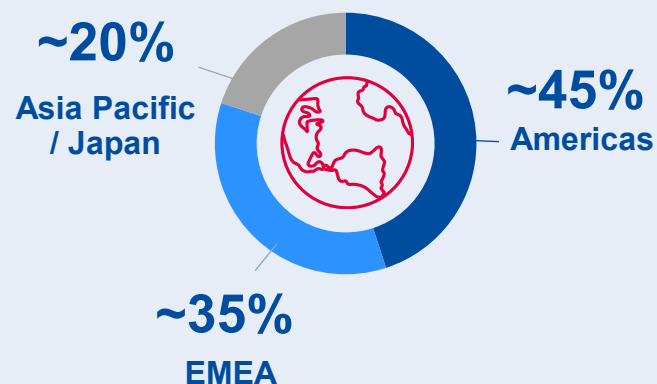
Diversified customer base

Well-balanced leadership in Life Sciences and Molecular Diagnostics



Broad geographic reach

~6,200 QIAGENers ensuring access to attractive markets with shipments to >170 countries



Highly recurring revenues

Growing installed base generating demand for high-margin consumables

~88% Consumables and related revenues
~12% Instruments





QIAGEN product portfolios



Sales reporting: Product groups



QIAGEN product groups

		Growth Pillars				
		Sample technologies ⁽¹⁾	QIAcuity digital PCR	QIAstat-Dx	NeuMoDx	QuantiFERON
Sample technologies ⁽¹⁾	Consumables and instruments used in sample collection, stabilization, storage, purification and quality control including QIA Symphony, QIAcube and EZ2					
Diagnostic solutions ⁽²⁾	Clinical molecular testing solutions for infectious diseases, immune response, oncology and women's health including consumables and instruments					
PCR / Nucleic acid amplification	Research and applied testing PCR solutions, components and instruments including QIAcuity and Rotorgene-Q					
Genomics / NGS	Platform agnostic genomics solutions including Universal NGS consumables and QIAGEN Digital Insights bioinformatics software solutions					
Other	Various products including protein biology, royalties, intellectual property revenues and freight charges					

1) Includes sales for diagnostic sample preparation (DSP).
2) Includes revenues for companion diagnostic co-development agreements.

Sample technologies



Sample collection, stabilization and storage solutions



Manual sample preparation



Automated sample preparation



Quality control instruments

Customers

Life Sciences



Academic



Pharma



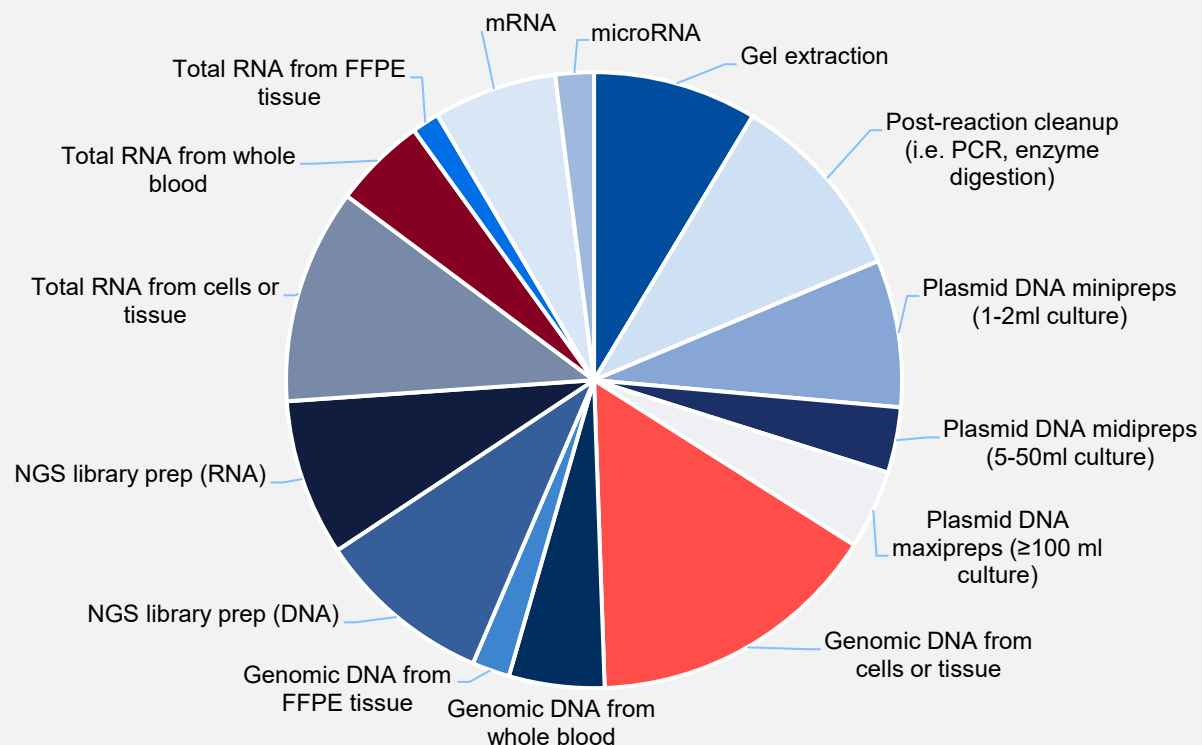
Applied testing

Molecular Diagnostics



The first step in virtually any molecular biology laboratory process

QIAGEN holds leading products in the vast majority of applications



Sample preparation market by application

Up to 60%

market share in some applications of sample preparation

Sample technologies market

>1 million samples processed daily

>\$1 billion annually

~3-4% CER annual growth

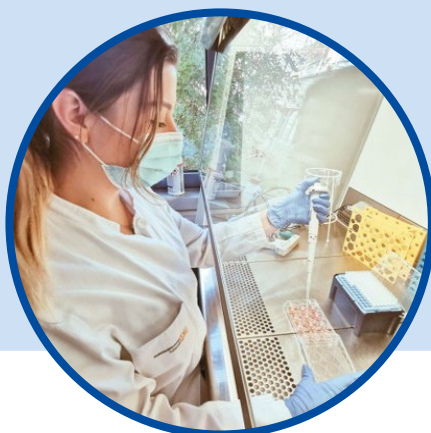
*Sample preparation method data from Percepta reports: The Life Science Dashboard – Nucleic Acid Purification (North America and Europe) .

Our Sample technologies are the foundation of QIAGEN

A portfolio that has grown to address the complete spectrum of processing biological samples

Selected biological samples

- ✓ Tissue
- ✓ Cells
- ✓ Blood
- ✓ Serum
- ✓ Plasma
- ✓ Urine
- ✓ Stool
- ✓ Saliva
- ✓ Other body fluids
- ✓ Bone
- ✓ Plants
- ✓ Soil



Applications

- ✓ Cloning
- ✓ DNA amplification
- ✓ Arrays
- ✓ Gene editing
- ✓ Epigenetic
- ✓ Cellular analytics
- ✓ qPCR / dPCR
- ✓ Sequencing / NGS
- ✓ Liquid biopsy
- ✓ Microbiome
- ✓ Gene silencing
- ✓ Proteomics

>200,000
publications
referencing QIAGEN
sample prep

Input demands

Low / high-volume
Low-quantity
Tubes / plates

Processing

Manual



Target analytes

Genomic DNA
Plasmid DNA
cfDNA
mRNA, rRNA,
miRNA
Proteins
Circ. Tumor cells

Input demands

Low-quantity
High-quantity
Tubes / plates

Automated

Low-to
High-throughput



Building on Sample Technologies solid leadership

Sample technologies



Upgrading key automation platforms

QIAcube Connect

Launched 2019



EZ2 Connect

Launched 2021



QIAsymphony Boost

In development



QIAcube



EZ1



QIAsymphony



Cumulative
placements
(at end 2022)

>14,000

>5,000

>3,200

Comprehensive consumables portfolio

Over 300 kits

- Any sample format
- Any analyte (DNA, RNA, Proteins)
- Low to high throughput

2022 sales split – Sample technologies consumables

RNA kits
~30%



DNA kits
~70%

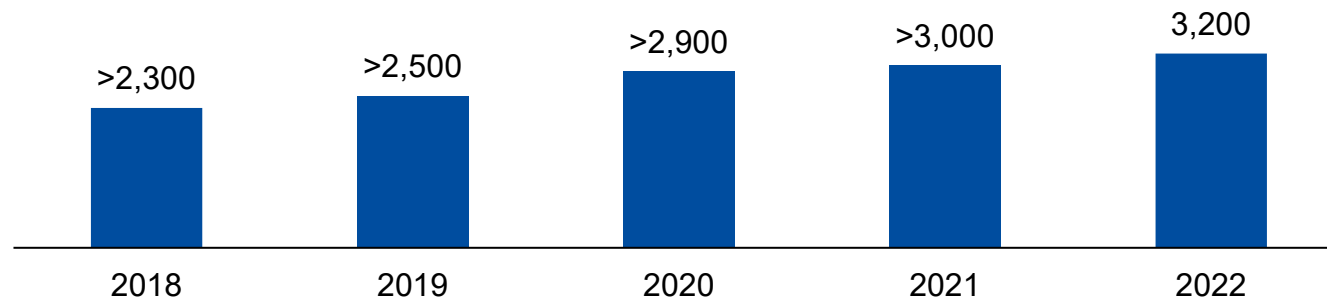
SPOTLIGHT: QIAasymphony – Flagship platform for sample processing

Off-the-shelf solutions and customizable protocols to fit wide range of laboratory needs

Front-end automation solution for molecular testing

Regionalization strategy

- US: Focus on sample technologies
- Rest-of-world: Sample technologies and modular IVD assays
- 22 CE-IVD and 5 FDA-cleared assays



>3,200 cumulative placements and counting...



Diagnostic solutions



Immune Response



Infectious diseases



Women's Health



Oncology and Precision Medicine

Customers

Molecular Diagnostics



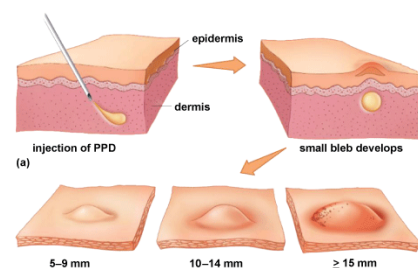
Immune Response: Best-in-class IGRA test for latent tuberculosis

What is QuantiFERON?

QuantiFERON-TB Gold Plus (QFT-Plus) is a simple blood test that aids in the detection of Mycobacterium tuberculosis, the bacteria which causes tuberculosis (TB).

QFT-Plus is optimized with innovative tuberculosis-specific antigens that elicit both CD8+ and CD4+ T cell responses – enabling a more accurate assessment of cell-mediated immune response to TB infection.

Tuberculin skin test (TST)



- Manual placement, reading, data entry
- Affected by BCG vaccine and NTM
- Two patient visits required
- Significant inter-reader variability
- Poor surveillance tool
- Often no quality control after training

QuantiFERON-TB (QFT)



- Can be fully automated
- Highly specific
- Results with one patient visit
- No inter-reader variability
- Electronic results
- Quality-assured laboratory test⁽¹⁾

BCG – Bacillus Calmette-Guerin vaccine | NTM – Non-tuberculosis mycobacteria | (1) Not available in all markets

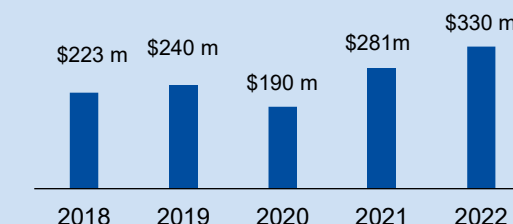
Latent TB testing market

✓ **>\$1 billion** annually

✓ **QIAGEN ~70-80%** share IGRA tests

~30% of TB testing market has been converted from skin test

QuantiFERON-TB sales trends



A growing market demand for modern latent TB testing

What is the difference between latent TB and active TB?

Latent TB infection (LTBI) can persist for weeks, months or years before developing into active disease. Although LTBI is not contagious, there is a ~10% average lifetime risk of it becoming active. According to the World Health Organization, up to 1/4 of the world's population is infected with latent TB.

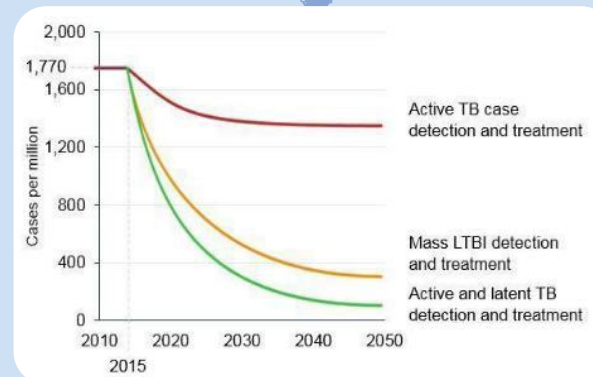
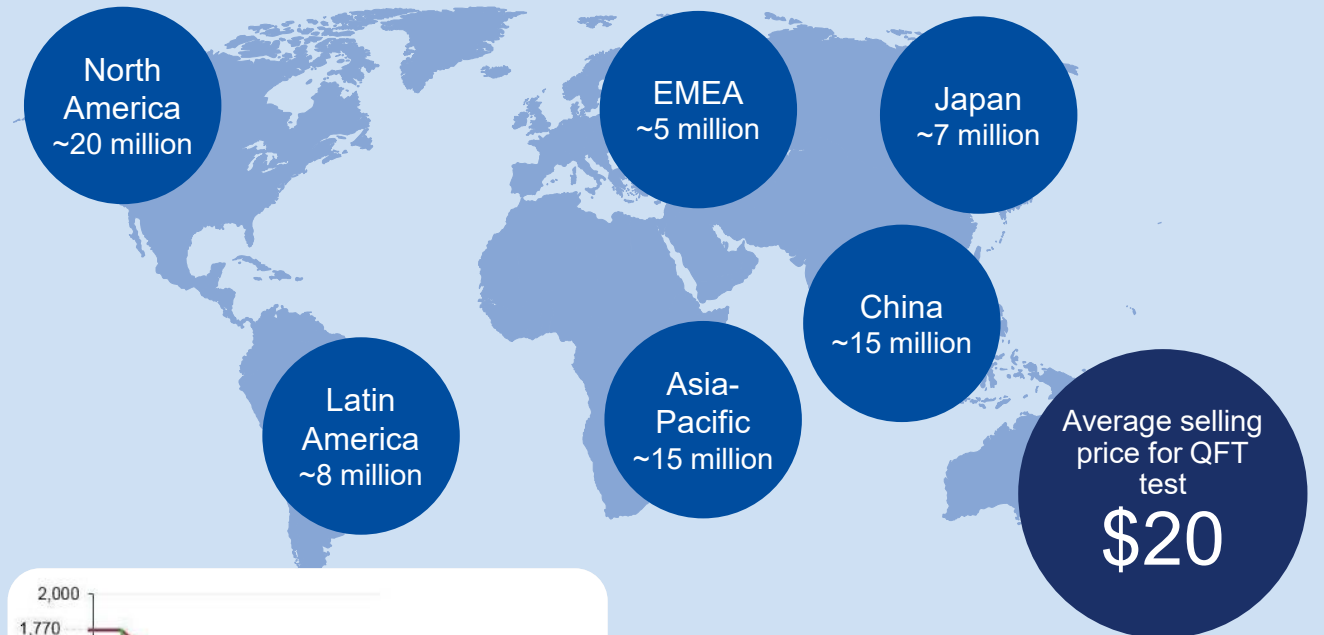
Why is latent TB infection important?

Diagnosing LTBI, and preventive treatment, can significantly reduce the risk of disease, and prevent outbreaks from recent transmission. On a global level, achieving a significant reduction in the burden of TB cases cannot be achieved without also including the detection and treatment of LTBI (Figure (2)).

For more info on latent TB testing visit: www.quantiferon.com

LTBI – Latent TB infection

~70 million latent TB tests per year across the world



The benefit of combating both active and latent TB infection.

QuantiFERON offers fully automated workflows for low and high throughput testing

Enabling hands-free processing of QFT-TB Gold Plus

Strong best-in-class market position



High performing assay:
QFT TB Gold Plus
(4th generation test)



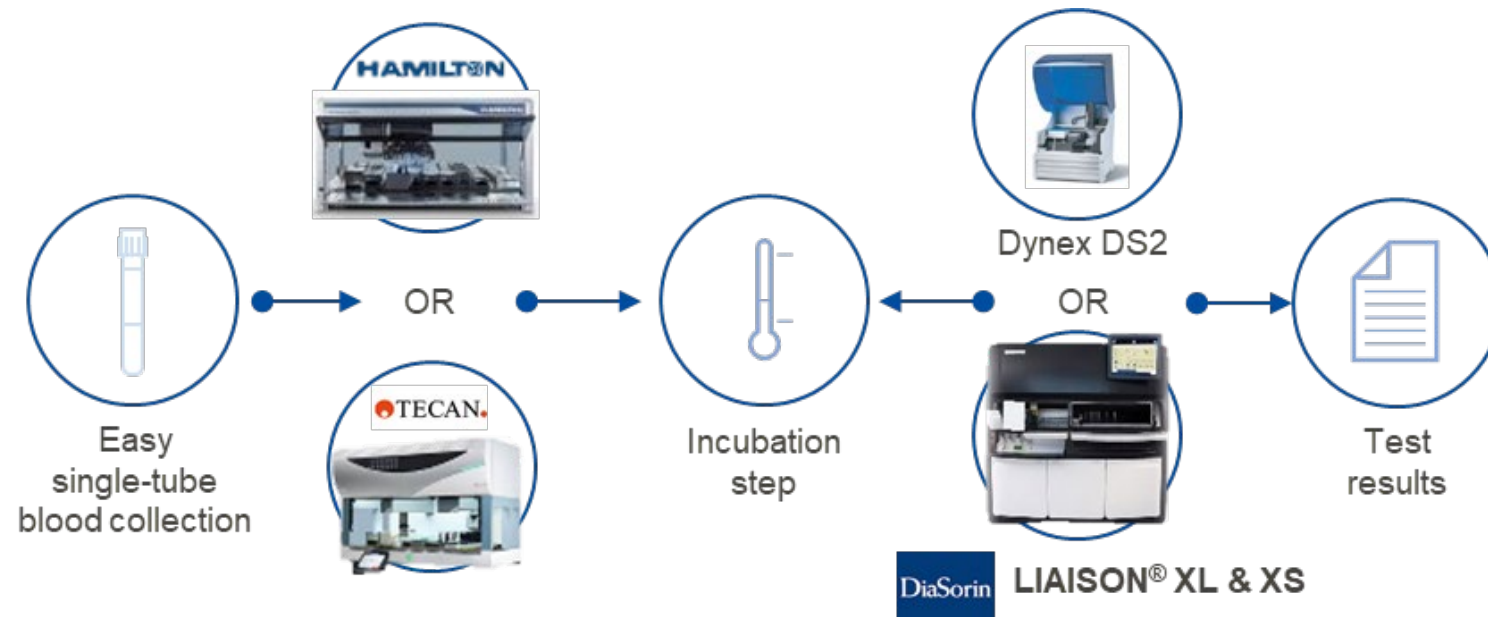
Excellent automation:
DiaSorin,
Hamilton, Tecan



Wide menu:
Embedded in
DiaSorin menu
(>130 tests)

**DiaSorin
LIAISON XS & XL**

>8,000 systems
Worldwide

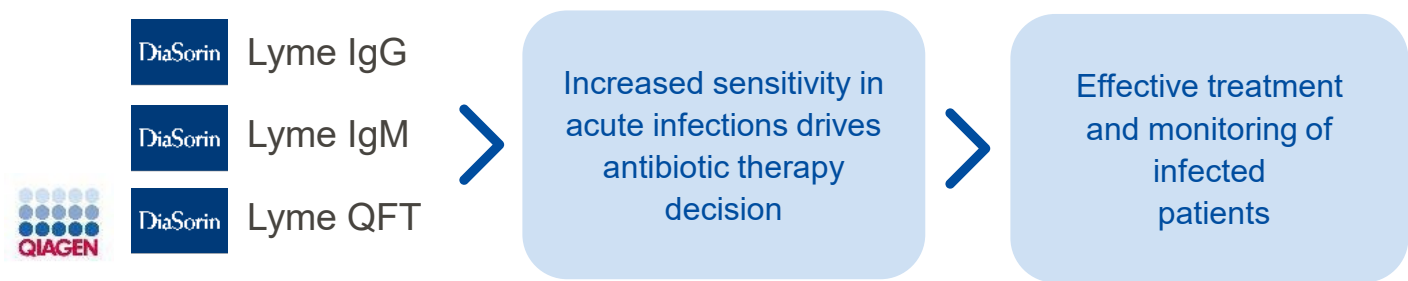


QuantiFERON Lyme: Combination of tests allowing a new level of detection

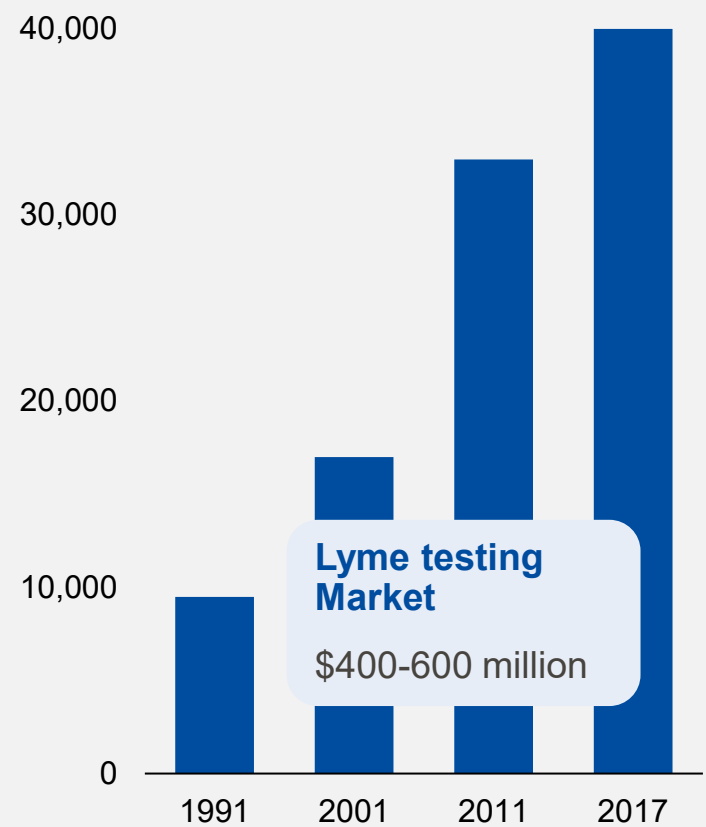
CE-IVD test launched in 2021
FDA approval pending (submitted Dec 2022)

	Confirmed cases	Potential testing market
Europe	~35,000 per year	~12-14 million tests per year
U.S.	~30,000 per year	~5 million tests per year

Combination of tests addresses urgent need for early detection

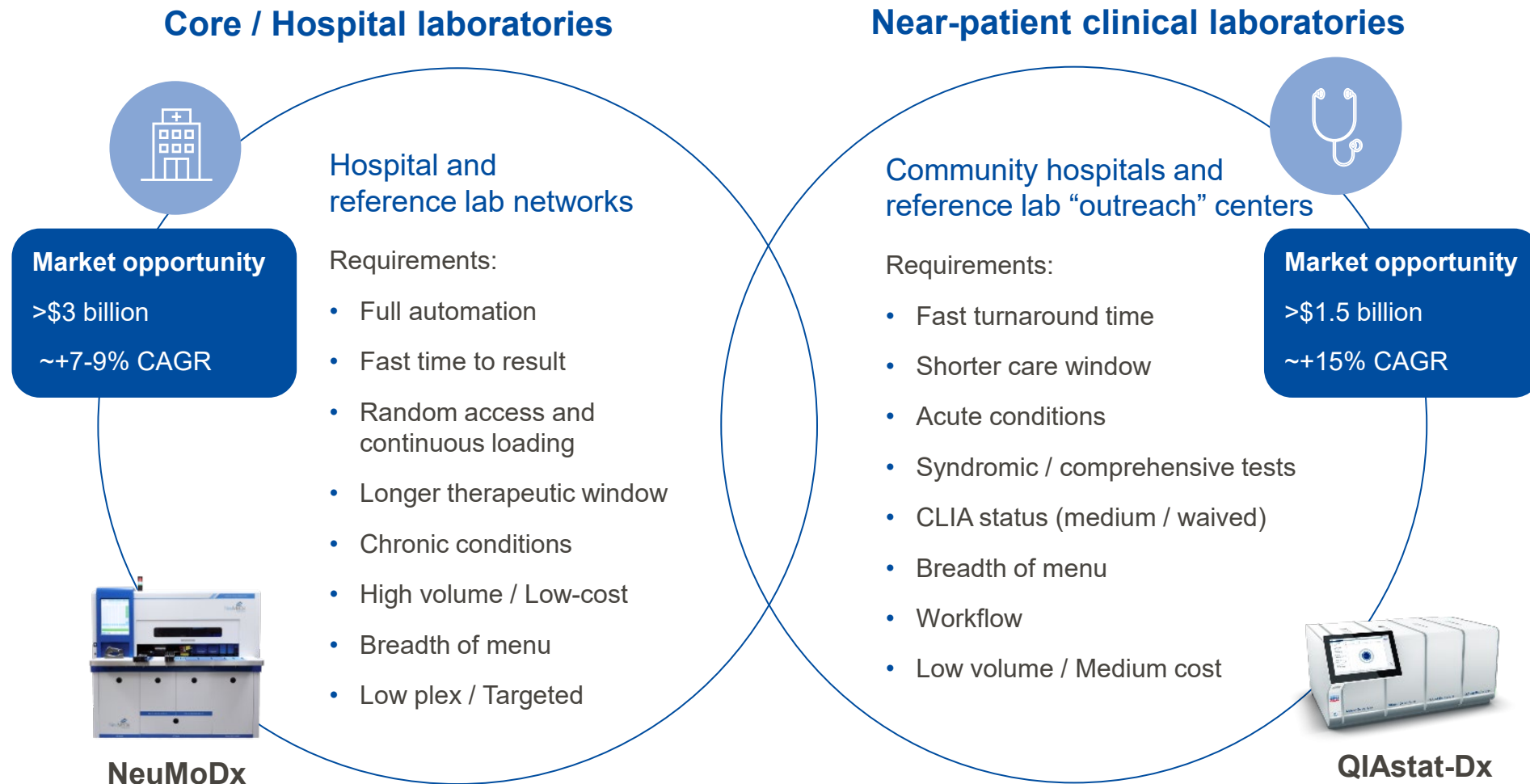


Rising occurrence of Lyme disease



(1)<https://ecdc.europa.eu/sites/portal/files/media/en/healthtopics/vectors/world-health-day-2014/Documents/factsheet-lyme-borreliosis.pdf>
(2)<https://www.cdc.gov/lyme/datasurveillance/index.html> 3 EDMA Market Data & proprietary market intelligence 4 US healthcare insurance reimbursement data

Infectious diseases: New generation of PCR technology for urgent needs



QIAstat-Dx: Capturing opportunities in the rapidly growing market of syndromic testing

What is syndromic testing?

Syndromic testing is a new approach to molecular diagnostic testing which uses a single test to look for multiple viral, bacterial or fungal infections.

Sets of common signs and symptoms are called 'syndromes', from the Greek word for concurrence.

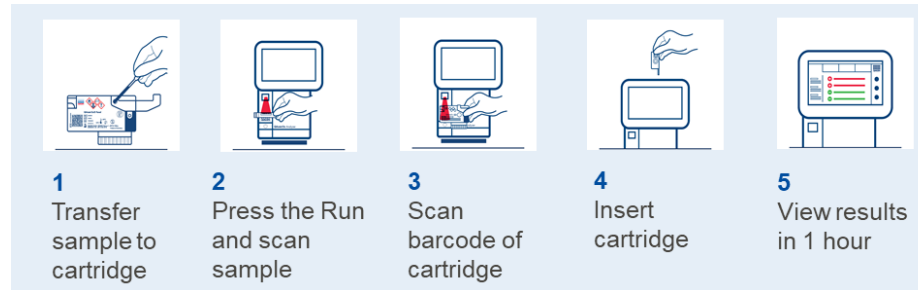
Testing multiple pathogens in a single test reaction is known as multiplexing. Multiplex molecular syndromic testing gives answers that are more accurate, comprehensive, and actionable for real-life decisions in critical care.

Several studies demonstrate how using panels to detect multiple pathogens at once is associated with both improvements in clinical practice and better outcomes, from increased diagnostic yield, greater diagnostic accuracy, to less use of resources, antibiotic use and reduced overall length of stay.

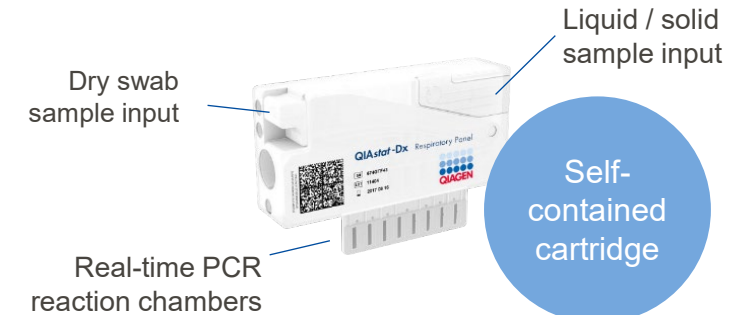
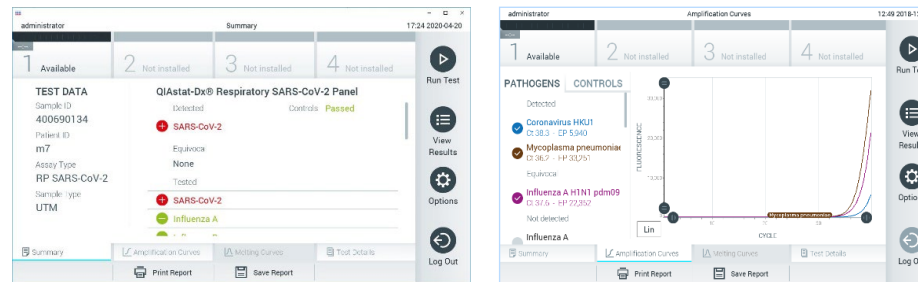


QIAstat-Dx: Reliable, fast and cost-effective diagnosis of complex syndromes

Unrivalled ease-of-use



More than a “yes / no” answer – access deep clinical insights



Operational module

Intuitive and simple graphical user interface

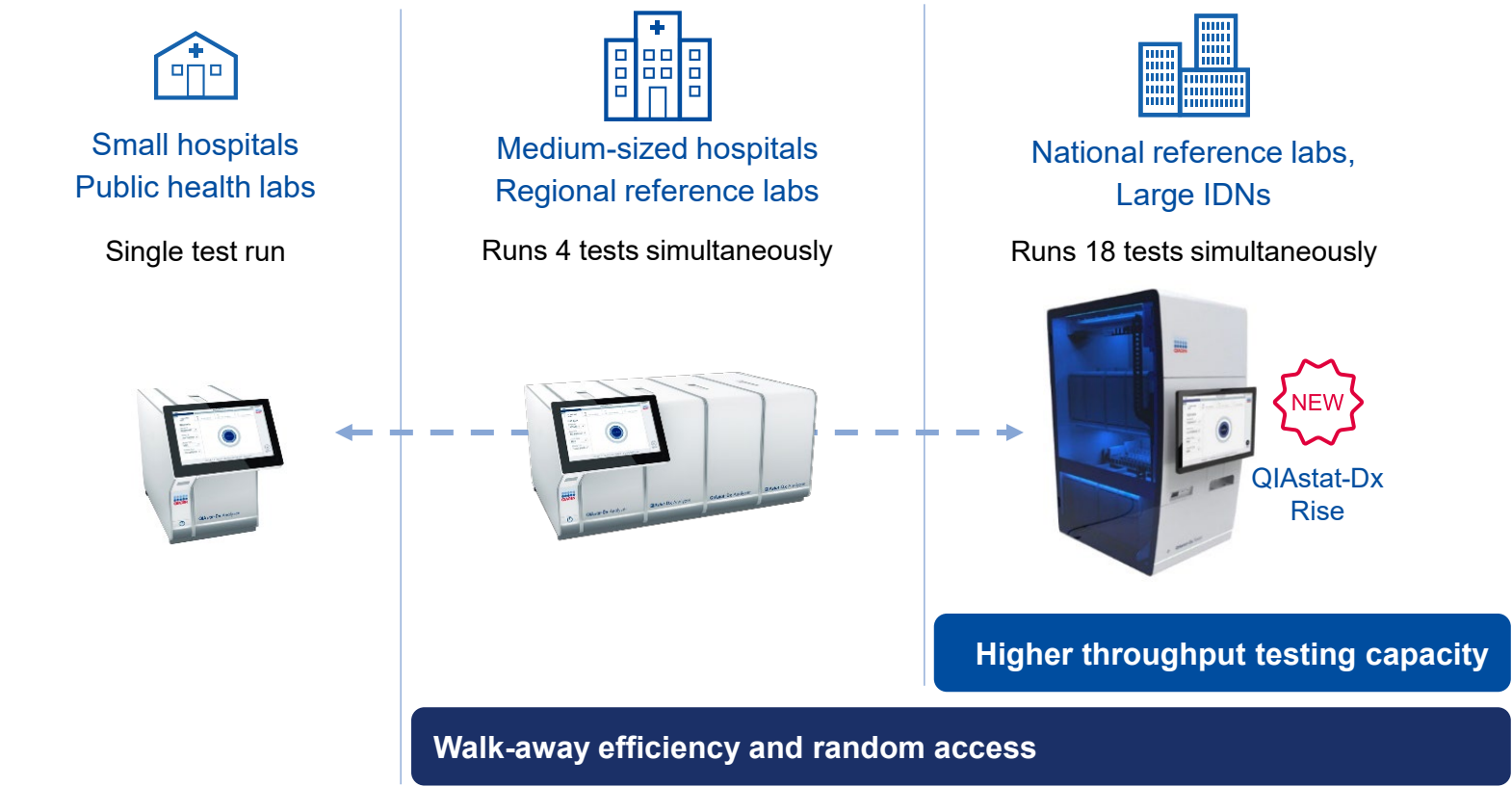
Analytical modules

- Small footprint with low maintenance requirements
- Up to 4 modules run on one operational module



QIAstat-Dx: Expanding menu in U.S. and Europe

Broadening the addressable market with QIAstat-Dx Rise



Seamless connectivity for enhanced testing continuity *powered by QIAsphere*

Unrivalled ease-of-use, no sample preparation required

Growing test menu

QIAstat-Dx test menu	CE-IVD	FDA
Gastrointestinal	✓✓	✓
Respiratory SARS CoV-2	✓✓	✓✓
Respiratory 4plex	✓✓	
Meningitis	✓✓	2023
MPX Viral Vesicular Panel	RUO	RUO 2023
Anti-Microbial Resistance		
Complicated urinary tract infection	2024	2024
Blood Culture Identification	RUO	RUO 2023
Pneumonia	2025	2025

Submitted ✓ Completed ✓✓ Planned submission year

QIAstat-Dx: Novel syndromic testing system delivering unique value

	 QIAstat-Dx (4 scalable slots used for comparison) QIAstat-Dx - Rise		Biofire FilmArray (1 slot)	Biofire Torch (12 slots)	Luminex ePlex (12 slots)	Genmark Verigene (1 slot)
Throughput (in 8 hours)	28	56	9	108	60	4
Throughput per slot (in 8 hours)	7		9	9	5	4
Sound emission < 60 dB	Yes	Yes	No	No	Yes	Yes
Integrated CPU and Reader	Yes	Yes	No	Yes	Yes	No
Hands-on time (in minutes)	< 1		4	4	< 1	10
Reagent preparation required	No	No	Yes	Yes	No	Yes
Respiratory direct swab (CE-IVD)	Yes		No	No	No	No
Modular assay design (allows flexibility to adjust for reimbursement)	Yes		No	No	No	No
Quantified results	Yes	Yes	No	No	No	No
Infectious disease and oncology platform capabilities	Yes		No	No	No	No

Source: QIAGEN estimates based on industry data

NeuMoDx: Bringing simplicity of clinical chemistry to integrated PCR testing

New generation of integrated PCR

Two scalable platforms: 96 and 288

Fully acquired in September 2020

Broad CE-IVD menu



LDTs – Laboratory-developed tests

NeuMoDx differentiation



- Easier: Three-step workflow process
- Faster: First results in ~1 hour
- More versatile: Capability to run Laboratory Developed Tests
- Convenient: Room temperature stable reagents

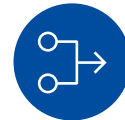
Self-contained cartridge



High throughput



Ultra-fast results



Regulated and LDTs in parallel



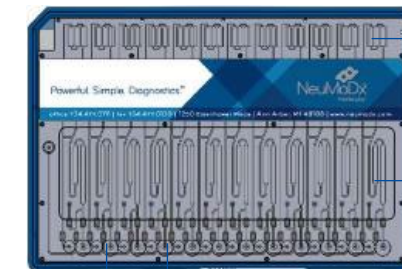
True random access



Cost efficiency

Fully integrated microfluidic design

- No moving parts
- Containment of all waste
- Fewer plastic disposables



PCR chamber

12 sample ports

12 PCR ports

NeuMoDx: Offering a broad CE-IVD menu



~300
cumulative
placements⁽¹⁾

(1) Cumulative placements as of December 31, 2022 LDT - Laboratory Developed Tests

NeuMoDx test menu		CE-IVD	U.S.
Blood-borne viruses	HBV	✓✓	2025
	HCV	✓✓	2025
	HIV	✓✓	2025
Transplant	CMV	✓✓	2023
	EBV 2.0	✓✓	2023
	BKV	✓✓	
	HSV 1/2	✓✓	
	Adenovirus	✓✓	
	HHV6	✓✓	
Sexual / Reproductive health	CT/NG	✓✓	2023
	GBS	✓✓	2024
	TV/MG	✓✓	2025
	HPV	✓✓	
Respiratory diseases	GAS	✓✓	
	SARS-CoV-2	✓✓	(EUA ✓✓) 510k 2023
	SARS-CoV-2 + Flu A /B +RSV	✓✓	(EUA ✓✓)
	MPX Viral Vesicular	RUO	RUO

Submitted ✓ Completed ✓✓

Planned submission year

NeuMoDx: A unique integrated PCR testing platform in >\$3 billion market opportunity



NeuMoDx 288

NeuMoDx 96

Hologic
Panther

Hologic
Panther Fusion

Roche Cobas
6800
(+ Omni LDT
channel)

Roche Cobas
8800

Beckman Veris
(Discontinued)

Abott Alinity M

	NeuMoDx 288	NeuMoDx 96	Hologic Panther	Hologic Panther Fusion	Roche Cobas 6800 (+ Omni LDT channel)	Roche Cobas 8800	Beckman Veris (Discontinued)	Abott Alinity M
Volume in '00,000s cm ³	38 ●	16 ●	18 ●	27 ●	81 ●	120 ●	38 ●	48 ●
On-board analytes	30 ●	20 ●	4 ●	32 ●	12 ●	12 ●	20 ●	20 ●
True random access	Yes ●	Yes ●	Only 4 assays ●	PCR or TMA ●	Random batch ●	Random batch ●	No ●	Random batch ●
Random access menu breadth	30 ●	20 ●	4 ●	32 ●	3 ●	3 ●	No ●	20 ●
Continuous loading of IVD + LDTs	Yes ●	Yes ●	No ●	Yes ●	No ●	No ●	No ●	No ●
Time to first result (minutes)	40 ●	40 ●	150-210 ●	150-210 ●	210 ●	210 ●	90 ●	115 ●
On-board sample capacity	288 ●	96 ●	120 ●	120 ●	350 ●	350 ●	48 ●	150 ●
Throughput (in 8 hours)	360 ●	150 ●	275 ●	335 ●	384 ●	960 ●	150 ●	300 ●
LDT capabilities	Yes ●	Yes ●	No ●	Yes (PCR only) ●	Yes ●	No ●	No ●	No ●
Reagent reconstitution required	No ●	No ●	Yes ●	Yes ●	No ●	No ●	No ●	No ●

Source: QIAGEN estimates based on industry data. Benchmark based on NeuMoDx 288 system.

Oncology and Precision Medicine: QIAGEN as a partner of choice

>25



pharma partnerships

CDx and LDT Market

>\$1.1 billion annually

~15% CAGR

Currently mostly LDT's

Day One Lab Readiness program

Program designed to further accelerate the access of cancer patients to QIAGEN's companion diagnostic products following regulatory approvals of drugs and their associated tests.

It allows our partners to prepare for newly launched tests with pre-approval of workflow implementation, training, assay verification, forecasting, medical communication and reimbursement to ensure immediate readiness upon launch.



Oncology and Precision Medicine: QIAGEN as a partner of choice

QIAGEN molecular diagnostic development

- 26 IVD development programs either in pre-clinical or clinical phase
- 20 CDx (Pharma sponsored) programs in clinical development
- 5 IVD clinical studies in China for internal IVD and Pharma-sponsored CDx development
- 5 Immuno-oncology CDx development programs in the clinic
- 2 NGS IO GEP development programs

2022 sales: ~\$90 million

- ~50% Pharma co-development revenues
- ~50% Sales of CDx assay portfolio

Offering both
PCR and NGS
technologies
for CDx



Leveraging a comprehensive Liquid Biopsy portfolio

Addressing opportunities in research and clinical applications to unlock insights from blood

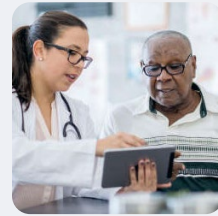
Liquid Biopsy applications



Non-Invasive Prenatal Testing (NIPT)



Cancer research and oncology



Transplant monitoring

Analytes



Cell-free circulating DNA / Circulating Tumor Cells / Exosomes / cell-free RNA



QIAGEN solutions



Sample preparation and stabilization

- PAXgene
- QIAamp
- AdnaTest
- EZ1 / EZ2
- QIAcube
- ExoEasy
- miRNeasy
- AllPrep
- QIAasymphony
- QIAxcel

Detection qPCR / dPCR

- AdnaTest
- QuantiNova
- miRCURY
- QIAcuity

Next Generation Sequencing

- QIAseq kits and panels

Data analysis and interpretation

- QIAGEN oncoland
- QIAGEN IPA
- QCI Interpret
- miRCURY
- CLC Genomics Workbench



Growing market trends

- Expansion of cfDNA utilization
- Use of Circulating Tumor Cells for molecular profiling
- Increasing focus on cell-free RNA / exosomes
- Multiple analytes from one sample
- Medium throughput automation

Women's Health: Prenatal testing and detection of sexually transmitted diseases

Cervical cancer screening

Digene – Comprehensive range of human papillomavirus DNA test

Maternal / Fetal testing

AmniSure – For the detection of PAMG-1 in amniotic fluid of pregnant women

PartoSure – To aid in the diagnosis of preterm labor

Sexually Transmitted Infections (STI) testing

Range of STI tests, including tests for detection of Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) infections



PCR / Nucleic Acid amplification



Digital PCR - QIAcuity



PCR reagents and instrumentation



Customized arrays

Customers

Life Sciences



Academic



Pharma



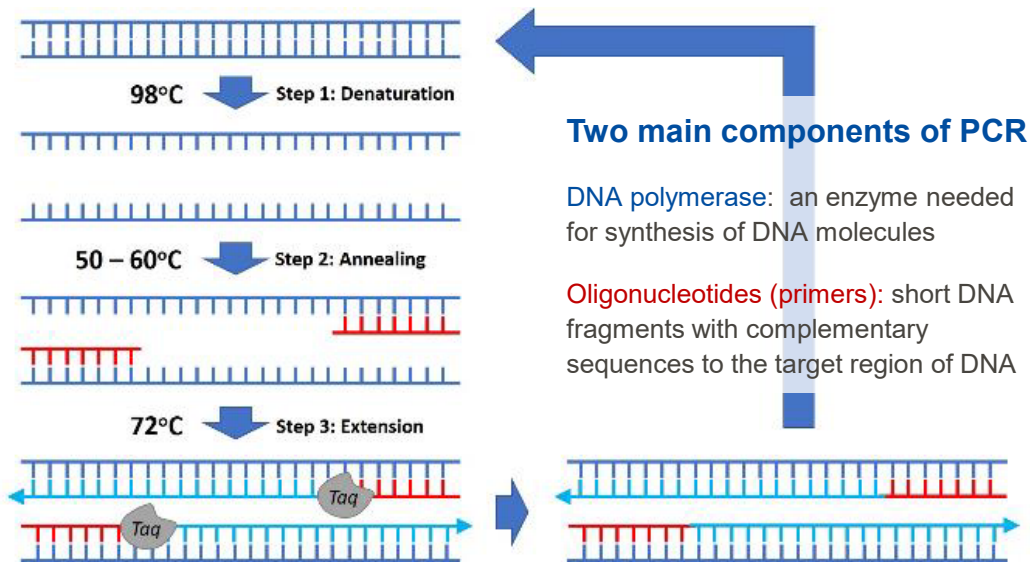
Applied testing

PCR: One of the most widely used tools in molecular biology

What is polymerase chain reaction (PCR)?

The process of replicating a specific DNA fragment through a series of thermal cycling to generate thousands to millions of copies.

Originally developed in 1983 by the American biochemist Kary Mullis.



Unlimited customization of arrays through QIAGEN's GeneGlobe portal

What is a PCR array?

A PCR array or PCR panel is a set of primers compiled for a collection of targeted genes of a specific theme or biological pathway. They are used in quantitative PCR for gene expression analysis and usually delivered in a 96- or 384-well plate format.

Digital PCR:

A new level of precision and sensitivity

What is digital PCR?

Digital PCR is a highly accurate approach for nucleic acid detection and quantification.

The basic principle is the same as other PCR technologies

Replicating a specific DNA fragment through a series of thermal cycling to generate copies.

The difference

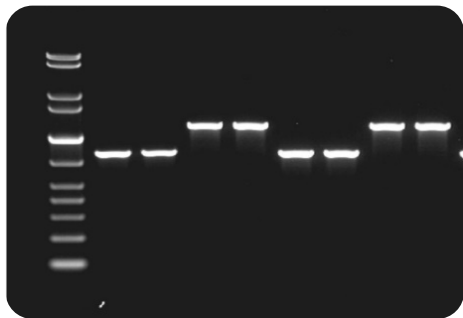
Each DNA molecule is partitioned into individual PCR reactions and amplified separately. This means that it is possible to measure absolute numbers of DNA molecules, effectively counting them. Digital PCR does not rely on a standard curve for sample target quantification. Eliminating the reliance on a standard curve greatly reduces error and improves precision.

Select applications

- Copy number variation
- Rare mutation detection
- Gene expression
- Biopharma QC and quantification
- Microbial pathogen detection
- NGS validation GMO detection



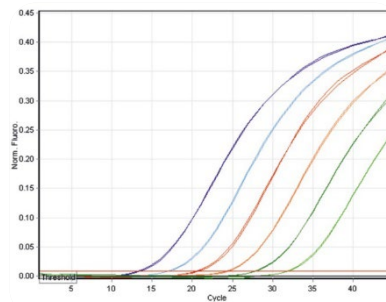
Digital PCR: The latest generation of PCR technology



1st generation
Conventional PCR

Qualitative

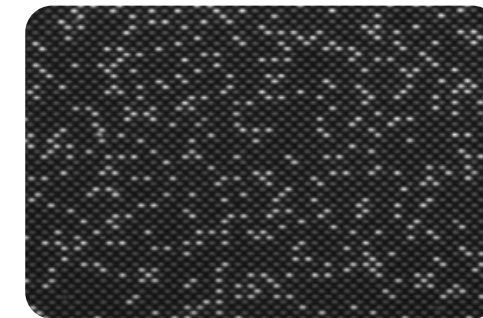
- Technically simple
- Multiplexing capabilities
- End-point detection
- Low cost



2nd generation
Quantitative RT-PCR (qPCR)

Relative quantification

- High accuracy, sensitivity and specificity
- Rapid cycling and throughput
- Non-specific amplification



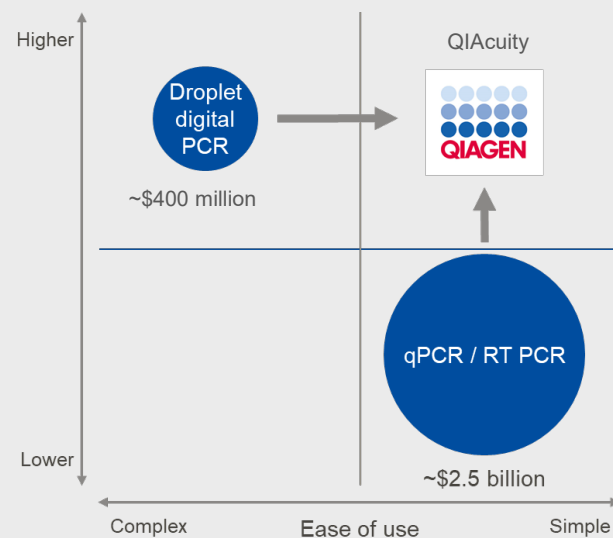
3rd generation
Digital PCR (dPCR)

Absolute quantification

- No standard curves
- Higher precision and sensitivity
- Low sensitivity to inhibitors
- End-point detection

Leveraging novel technology with QIAcuity digital PCR

Enabling access to the comprehensive PCR market



Easy-to-use system vs. competition



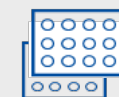
Scalable

Greater flexibility



More versatile

Higher multiplexing



Easier

Fully automated workflow

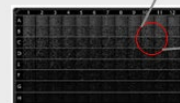


Faster

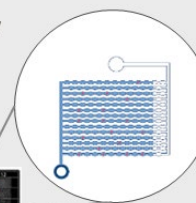
Over twice as fast time-to-result

Differentiated nanoplate system

Simplified workflow offers sample to result in **under 2 hours**



Microfluidic chambers



QIAcuity One



QIAcuity Four



QIAcuity Eight

Five pillars: QIAcuity digital PCR continuing to expand applications

> 1,000 cumulative placements by end of H1 2022



Highlighted applications

Cancer research

New automated workflow combining EZ2 Connect and QIAcuity creates powerful Sample to Insight solution for liquid biopsy and FFPE samples

Biopharma

10 new kits and custom assays for Cell and Gene Therapy applications

3 QIAcuity Residual DNA Quantification Kits

Microbial detection

New QIAGEN dPCR Microbial DNA Detection Assays deliver specificity and sensitivity of QIAcuity in a fast and simple workflow

Wastewater testing

70% of U.S. states using QIAcuity for wastewater detection of SARS-CoV-2

Partnership with GT Molecular for complete wastewater testing workflow



Proteomics

Partnership with Actome for development of protein quantification assays coupled with genomic analysis



PCR enzymes, reagents, and arrays for research workflows

QuantiNova: Automatable, ultrafast kits with in-process controlled safety measures



- PCR or 1-step & 2-step RT-PCR
- SYBR Green or Probe based detection
- Singleplex or multiplex options
- Use with custom primers or pre-designed assays, arrays, panels

	QuantiNova SYBR Green PCR Kit		QuantiNova Probe PCR Kit		QuantiNova Multiplex PCR Kit		QuantiNova Reverse Transcription Kit		QuantiNova SYBR Green RT-PCR Kit		QuantiNova Probe RT-PCR Kit		QuantiNova Multiplex RT-PCR Kit		QuantiNova Pathogen +IC Kit	
Starting material	cDNA or gDNA				RNA								DNA/RNA			
Use in quantitative RT-PCR	2-Step				cDNA synthesis	1-Step										
Detection chemistry	SYBR® Green I	Probes	Probes			SYBR Green I	Probes	Probes	Probes							
Multiplexing		2-plex	5-plex				2-plex	5-plex	4-plex							
Internal control provided						Internal Control RNA								IC DNA/ RNA & assay		
Visual pipetting control	•	•	•			•	•	•	•							
gDNA removal				•			•									
Room temperature set-up	•	•	•			•	•	•	•							

For more info on QuantiNova visit <https://go.qiagen.com/QuantiNovaKits>

QuantiNova: Automatable, ultrafast kits with in-process controlled safety measures

- Expert-designed panels target the most relevant genes
- Simple procedure enables routine use with any real-time PCR instrument
- Complimentary online tools make data analysis quick and easy



qPCR consumables market

~\$2.5 billion

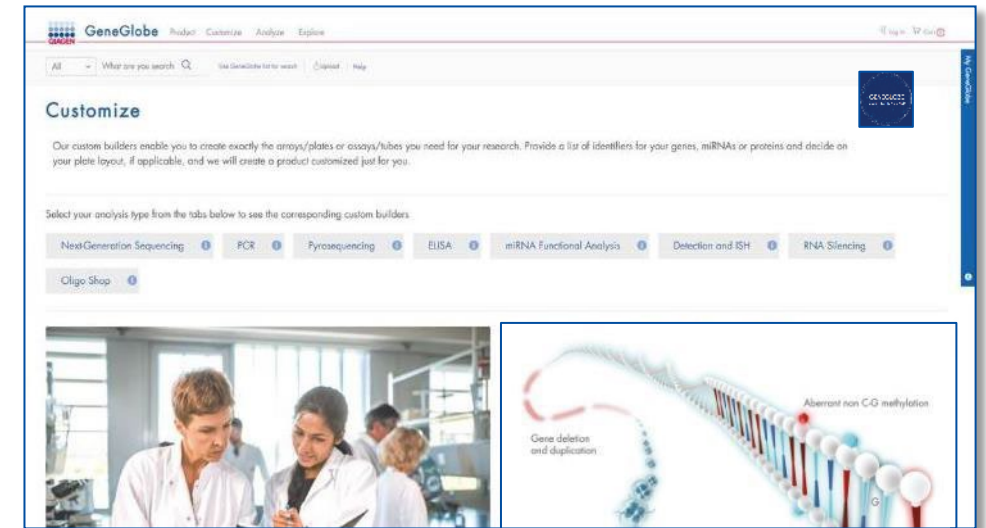
~1-2% CER annual growth

Customized arrays: GeneGlobe design and analysis portal for biological content

A world of genes, pathways and biological targets

Find NGS, PCR and functional analysis assays in the relevant scientific context. Design custom products with full flexibility on target regions, configuration and format. Analyze data with ready-to-use NGS and PCR analysis pipelines, and plan follow-up studies to further explore results.

- ✓ 10 years of experience
- ✓ NGS and PCR applications⁽¹⁾
- ✓ >10,000 users
- ✓ >10 million possible custom arrays
- ✓ >15,000 publications included



SEARCH / BROWSE

Browse the broadest portfolio of NGS, PCR and functional analysis assays and oligos with an intuitive and streamlined navigation



KNOWLEDGE HUB

Explore our knowledge hub filled with gene and pathway information, access to product handbooks and resources, and reading rooms on special topics



CUSTOM PRODUCT BUILDER

Create custom products tailored to your research question using our comprehensive set of redesigned custom product builders

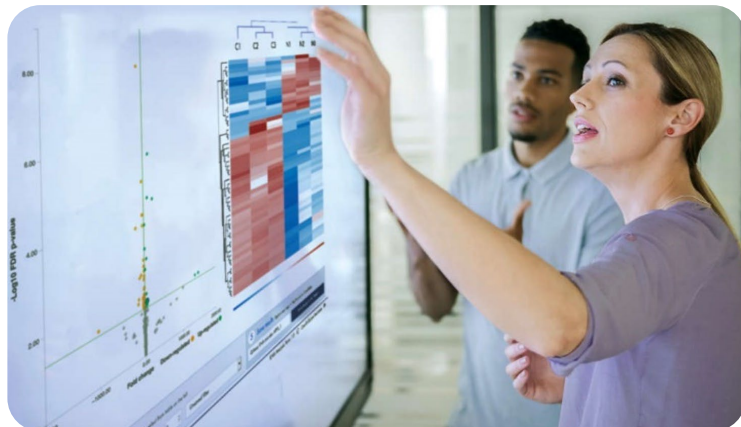


DATA ANALYSIS CENTER

Analyze your NGS or PCR data using our complimentary suite of online analysis tools

(1) Millions of assays for digital PCR applications

Genomics / NGS



Universal NGS consumables



Illumina collaboration NGS assays



Bioinformatics solutions

Customers

Life Sciences



Academic



Pharma



Applied testing

Molecular Diagnostics



Universal NGS: QIAseq solutions providing high-performance chemistry

Target enrichment and streamlined library preparation leveraging leading sample preparation and bioinformatics

QIAGEN NGS differentiation

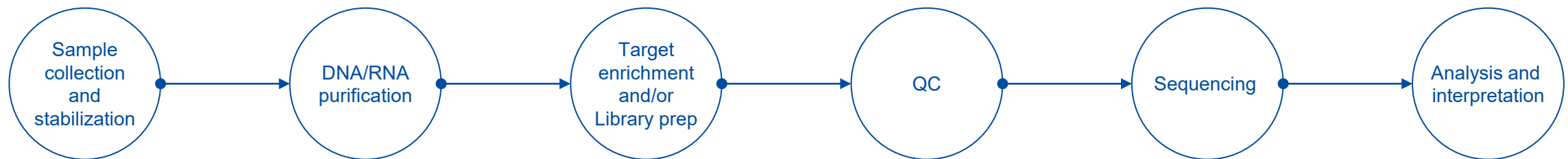
Superior technology performance for target enrichment
Gold standard RNAseq products for miRNA and RNA removal
Integrated with leading sample preparation and bioinformatics



NGS research market

>\$800m market
>15% CAGR

Over 1 million cancer samples analyzed



QIAGEN
sample preparation

QIAseq Universal NGS solutions
Compatible with any sequencer

QIAGEN Digital Insights
Compatible with any sequencing data

Partnership to accelerate use of NGS in clinical decision-making

Genomics / NGS



QIAGEN to develop and market NGS IVD kits (including CDx assays) for use on Illumina systems

- Integrated with QIAGEN sample technologies, NGS IVD kits and bioinformatics solutions for “Sample to Insight” experience
- Rights for use of Illumina’s clinical sequencers
- Illumina to sell sequencers and related sequencing consumables

Initial focus area in Cancer

Future options to expand into other key IVD areas



Cancer
(Genomic
profiling)



Infectious
diseases



Autoimmune
diseases



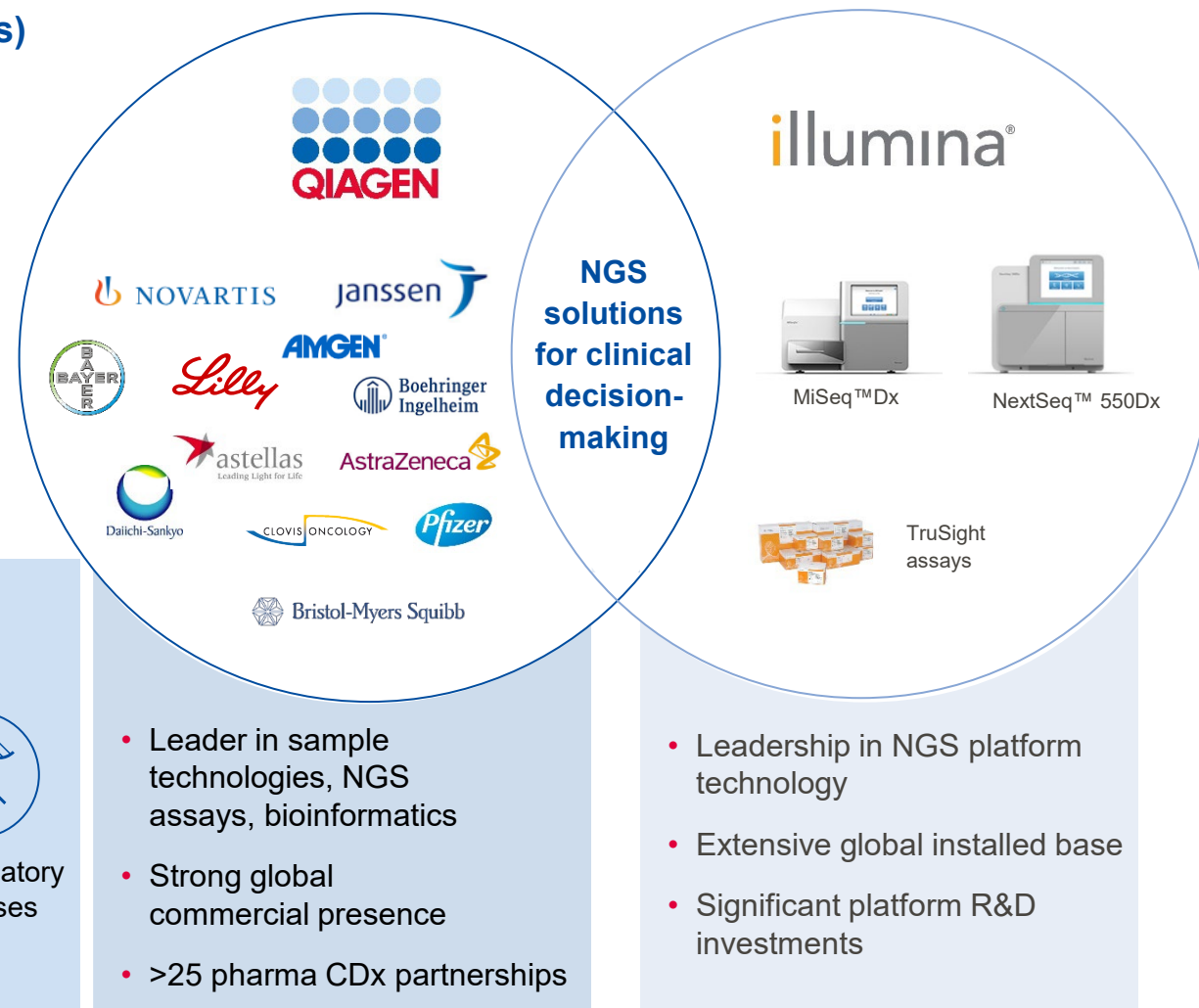
Cardiology



Hereditary
diseases



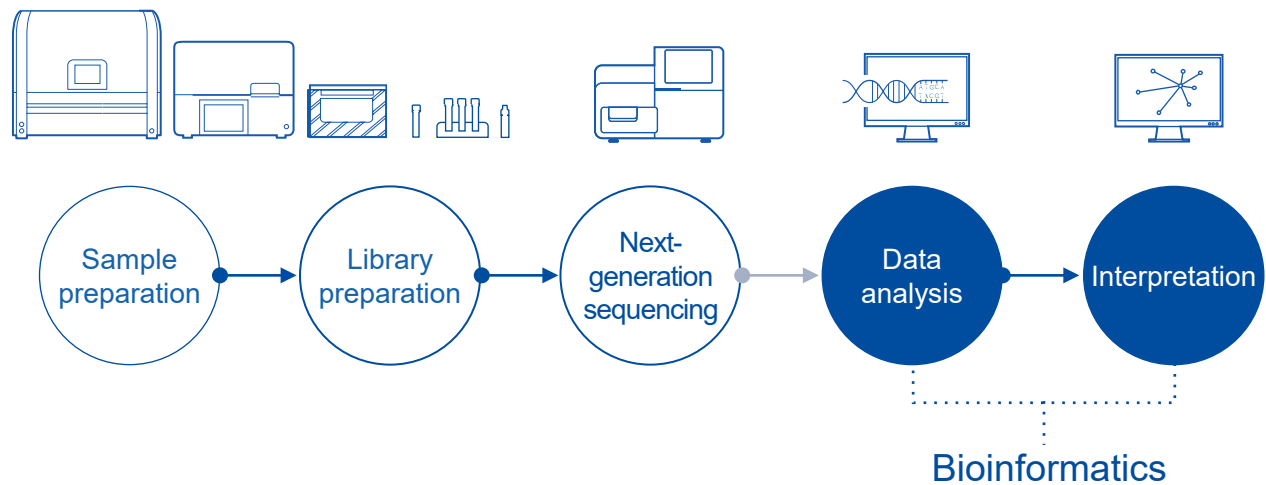
Inflammatory
diseases



QIAGEN Digital Insights: Turning sequencing data into clinically actionable information

Bioinformatics [baɪ.ouˌɪnfərˈmætɪks] is an interdisciplinary field that develops methods and software tools for understanding biological data. As an interdisciplinary field of science, bioinformatics combines biology, computer science, information engineering, mathematics and statistics to analyze and interpret biological data.

Reference: wikipedia



Bioinformatics market

~\$620 million

~15% CER annual growth

Genomics / NGS



The partner of choice for actionable insights from molecular and real-world data

Multi-year partnership examples



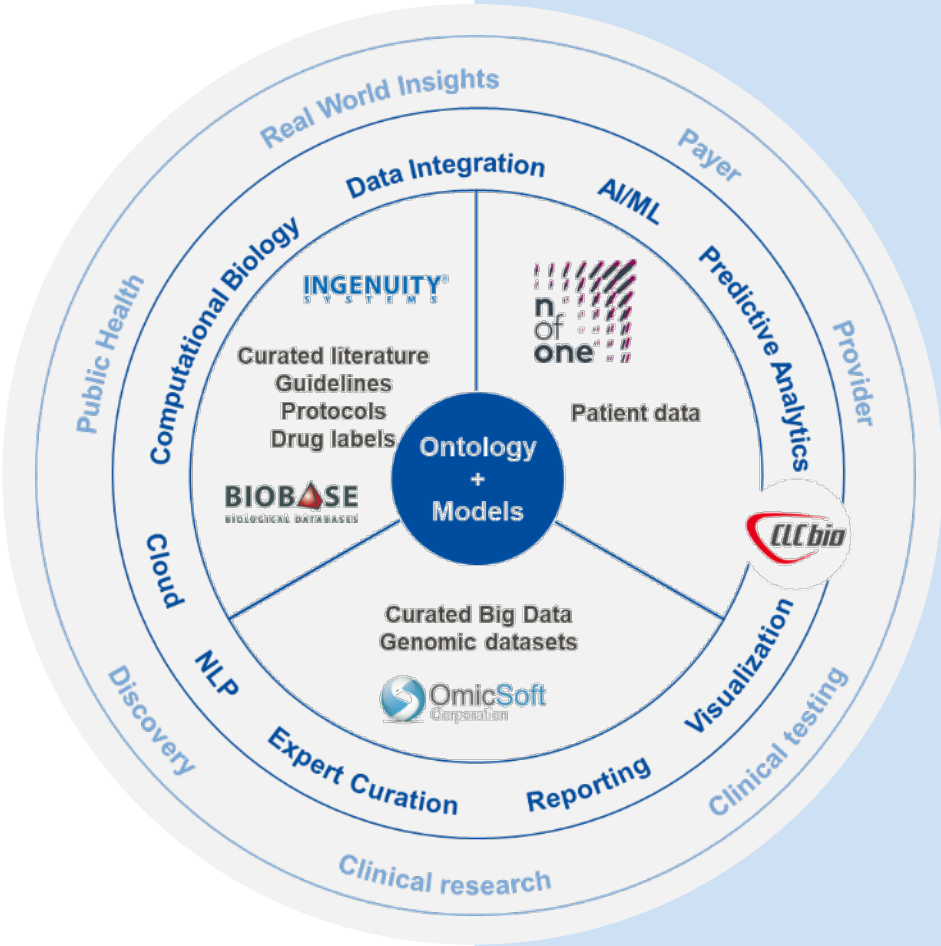
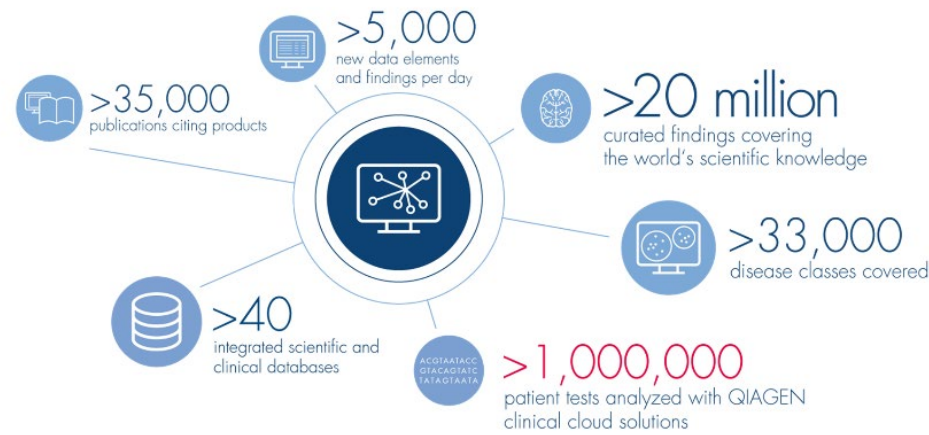
Preferred vendor for Genomics England to analyze 5 million genomes in 5 years for genetic disorders



Deliver custom NGS patient data interpretation for genetic markers for predispositions



Molecular oncology and oncogenetic screening data in Japan's landmark program with NGS testing



Discovery Insights: Serving the research community

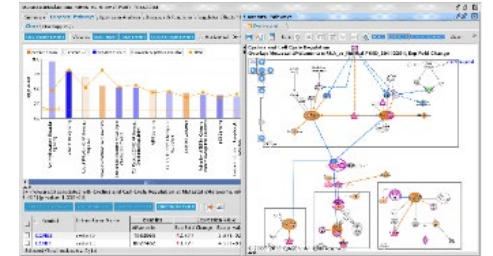
Example: Analyzing gene expression data from Sample to Insight



Biological
sample



Freedom
of Choice



Sample to data

NGS library prep
Sequencing

- Platform and Assay agnostic
- Whole transcriptome, Single Cell experiments

Data to information

Normalization and QC
Read mapping
Gene expression

- QIAGEN CLC Genomics Workbench, Server and Cloud Engine
- Per sample Analysis Portal, BaseSpace Integration

Information to knowledge

Data Integration
Metadata exploration
Differential expression

- QIAGEN OmicSoft Server and Land Explorer
- Curated Experiments (OncoLand, DiseaseLand, GeneticsLand, Single Cell Land)

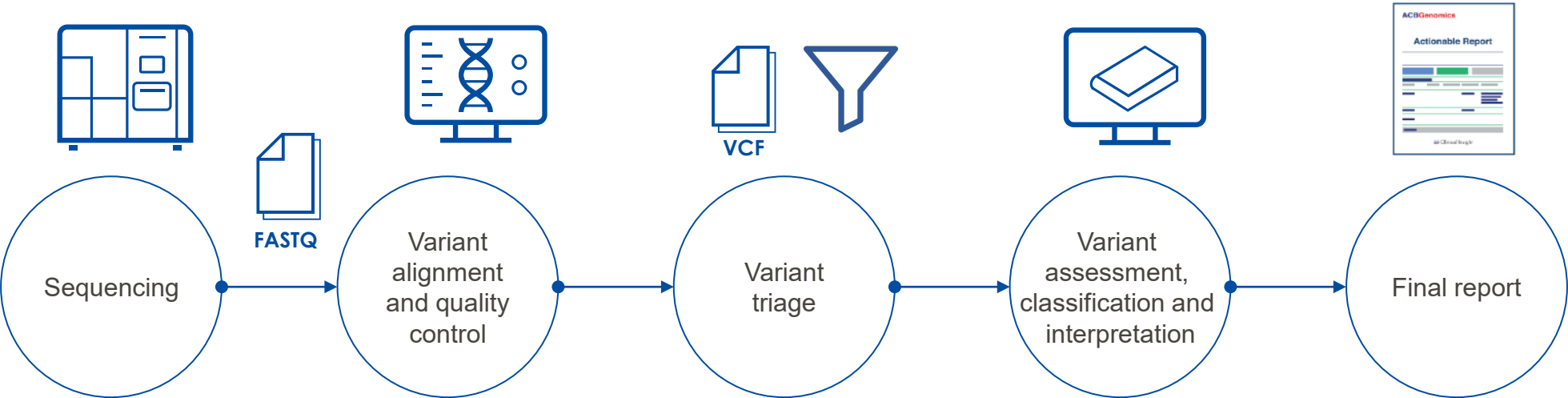
Knowledge to insight

Interpretation
Pathway analysis

- QIAGEN Ingenuity Pathway Analysis

Clinical Insights: Serving the diagnostic laboratories

Software platform for scalable, standardized and reproducible variant interpretation

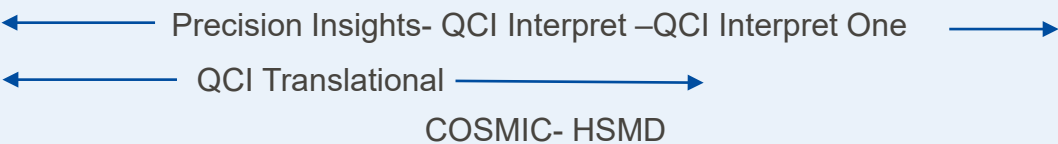


ONCOLOGY

Clinical Testing Labs
Clinical Research Workflows
Clinical Research databases

Freedom of choice
Freedom of choice
Freedom of choice

QCI PRODUCTS

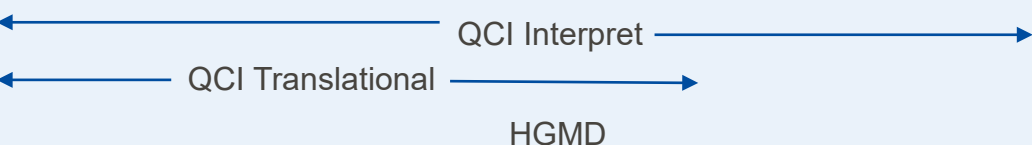


HEREDITARY

Clinical Testing Labs
Clinical Research Workflows
Clinical Research databases

Freedom of choice
Freedom of choice
Freedom of choice

QCI PRODUCTS



A portrait of Dr. Matthew Dodson, a man with dark hair, a mustache, and a goatee, wearing a dark suit jacket over a light blue and white checkered shirt. He is looking directly at the camera with a slight smile. The background is a blurred office interior with large windows.

“The insights we gained through QIAGEN’s analysis point the way to a possible therapeutic target for disease intervention.”

DR. MATTHEW DODSON

Post-Doctoral Research Associate,
Department of Pharmacology and Toxicology, University of Arizona

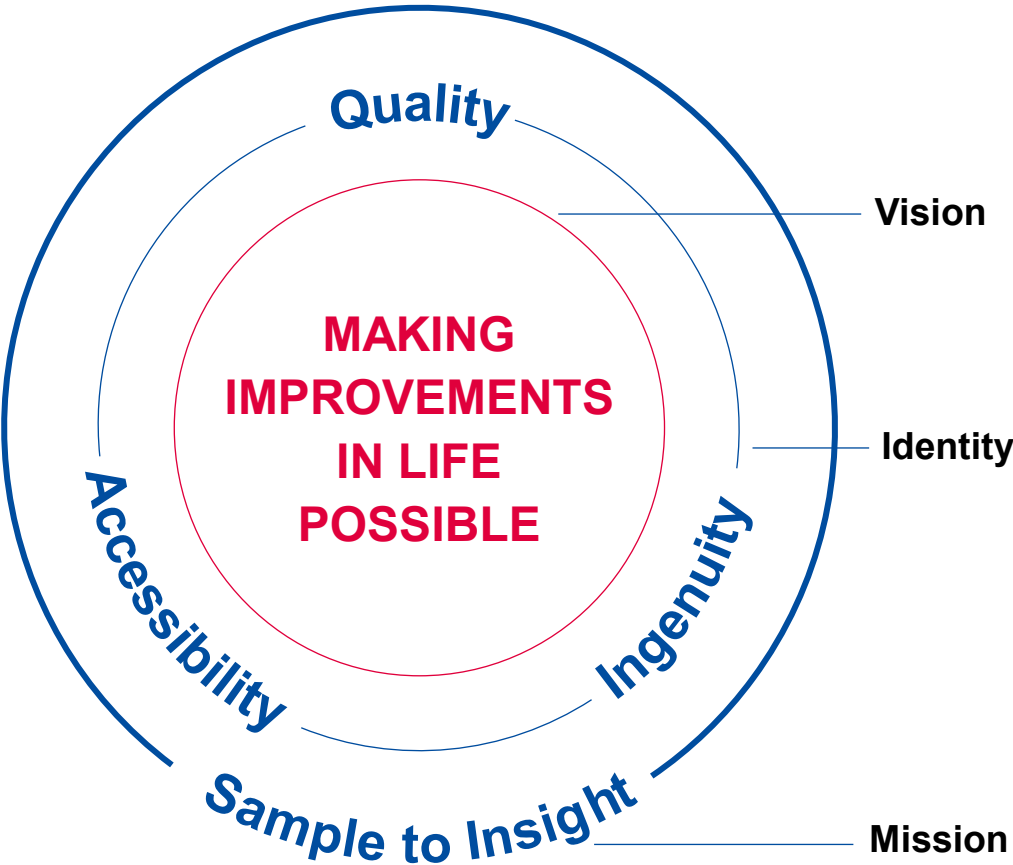
Because of **QIAGEN** our customers
are making improvements in life possible.



Sustainability at QIAGEN



Our vision is aligned with building a sustainable business



Our key levers: Sharpening our focus to optimize our impact



Aligned with U.N. Sustainable Development Goals

Environment



Responsibility for the environment

- Minimize carbon footprint
- Reduce, recycle and replace plastic

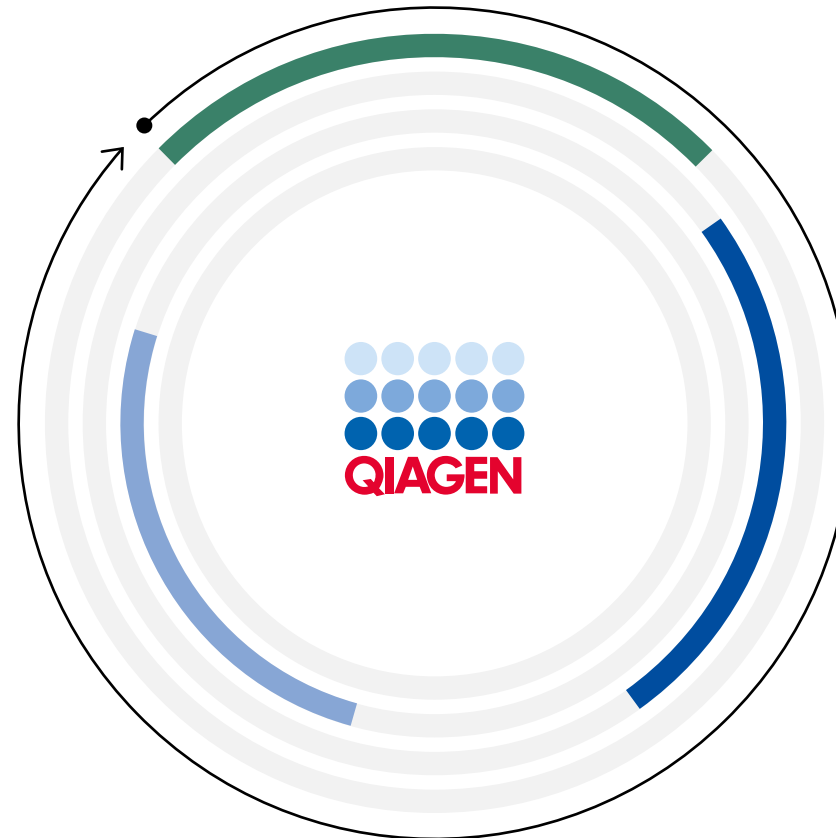


Governance



Business with integrity

- Governance, risk and controls
- Data and cyber security



Social



Serving society

- Access to healthcare
- Quality and product safety
- Customer satisfaction



Investing in people

- Employee attraction & development
- Diversity & inclusion
- Occupational health & safety



Facts and Figures

Climate

net-zero
commitment by 2050

417,361 tCO₂e
total carbon footprint for Scopes 1, 2 (market-based) and 3

88,087 MWh
total energy consumption

100 %
renewable energy for main production site in Hilden

~ 40 %
electricity from green tariffs

Water

131.9 megaliters
total water consumption

> 11 %
consumption in water stress areas

Waste

9.6 %
plastic footprint reduction in 2021 compared with previous year

63 %
less plastic and 42 % less cardboard used for each kit in QIAGEN
product range QIAwave

2,434 t
total waste

Product Life Cycle Assessment (LCA)

Certified LCAs
for a best-selling product in accordance with ISO 14040 / 14044

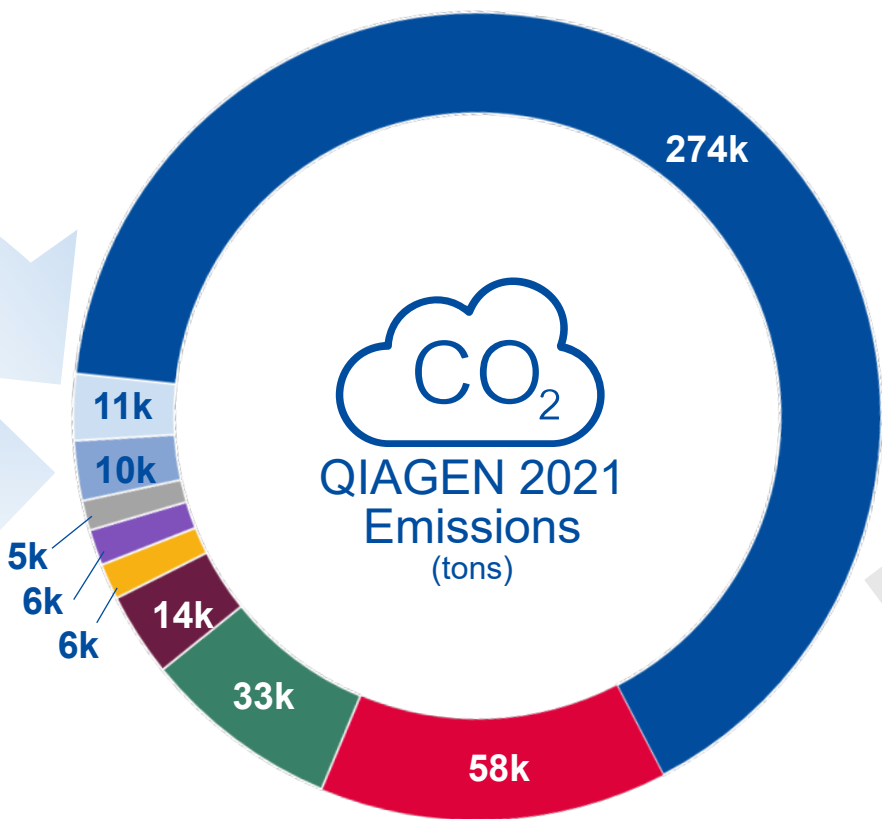
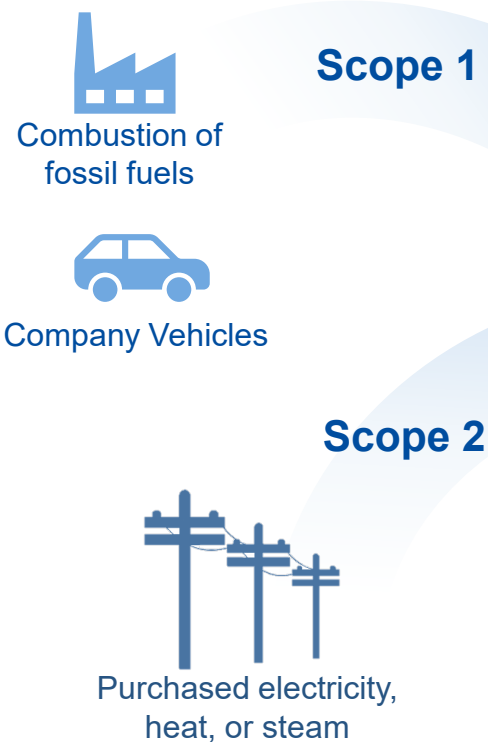


Environment: Reducing CO2e emissions across all operations



Scope 1 and 2 Emissions

42% reduction by 2030



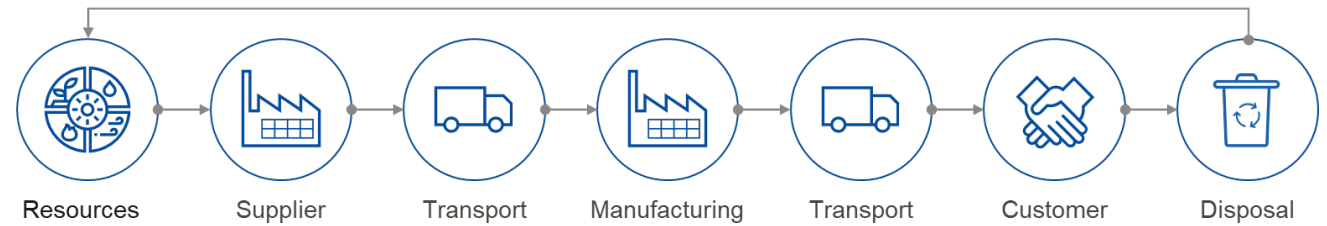
Scope 3 Emissions

12.3% reduction by 2030



CO2e is “Carbon Dioxide Equivalent,” the standard measure of greenhouse gasses. See 2022 QIAGEN Sustainability Report for more detail on QIAGEN carbon emissions.

Environment: Integrating sustainability throughout the value chain



Examples of sustainability in product design

- Avoiding materials that cause a lot of damage when they are mined, cannot be recycled or do not decompose
- Improving repairability, longevity, and allowing for reuse
- Designing products to use less energy and produce less waste for customers
- Optimizing recycling by making it easy to separate materials

Environment: New eco-friendly versions of best-selling kits



QIAwave RNA Mini Kit / QIAwave DNA Blood & Tissue Kit / QIAwave Plasmid Miniprep Kit



Up to **63%**
less plastic

Up to **42%**
less cardboard



Facts and Figures



Access to Healthcare

- Production **scale-up** to meet the demand for COVID-19 tests
- > 100 million QuantiFERON tests for tuberculosis have been made available in more than 130 countries to date
- > 1 million women screened for HPV with a QIAGEN test

Attractive Employer

- 6,028 employees, 11.1 % turnover, thereof 6.6 % turnover at management level
- Top employer certificate in Germany and China and Great Place to Work award in India, Philippines, the U.S., Brazil and Mexico
- > 1 million hours of training invested

Local Initiatives

- 780 hours of volunteer time committed to meeting community needs in North America

Health and Safety

- 0.85 Days Away Restricted or Transferred (DART) rate (per 100 employees)
- 0.97 recordable incident rate
- 40 work-related injuries
- Zero work-related fatalities



Diversity and Inclusion

- Diversity and Inclusion program hosted by QIAGEN Executive Council on Equal Opportunities (ECEO) incl. company-wide ambassadors
- 34 % of leadership roles filled by women
- Listed in Bloomberg Gender Equality Index



Social: Aiming to provide equitable access to all QIAGEN products



Working to ensure developing countries gain access to affordable diagnostics to help prevent and treat diseases

Providing Access to Healthcare



Discovery and Innovation

Development of diagnostic solutions for some of the most prevalent and emerging diseases



Availability

Collaboration with global networks to ensure wide-spread availability in all regions



Affordability

Offering concessional access pricing for customers in low-resource and high-burden countries



Accessibility

Providing access to molecular technologies, regardless of economic and social status

Areas of accelerated efforts

Committed to expanding screening for tuberculosis (TB) in regions with high rates of disease but limited resources, QIAGEN has launched QIAreach QFT, a test built into a fully portable device, ideal for low-resource, decentralized and rural areas.

Tuberculosis

Focusing on projects to help improve the lives of women by increasing access to screening for the human papillomavirus (HPV). Over 1 million women have been screened for HPV with a QIAGEN test from our women's health portfolio.

Human papillomavirus

Working closely with governments, public health authorities and customers worldwide to ensure availability and development of critical COVID-19 testing diagnostics.

COVID-19

Deepening commitment to diversity and inclusion



Diverse teams strengthen our organization through the variety of ideas, perspectives and approaches



Executive Council on Equal Opportunity (ECEO)

Created to drive change within QIAGEN around diversity and inclusion



Diversity and Inclusion Ambassador Program

>25 QIAGENers from around the world championing diversity and inclusion across global sites



Strategic initiative to increase gender diversity

Increased women in leadership roles from 29% in 2018 to 34% by end-2021

We value an environment where all individuals have equal opportunity to grow and contribute



Facts and Figures

Human Rights

Our Human Rights Policy provides guidance on our relationships with customers, product use, employees and our supply chain

Compliance

>7,000 online training modules completed

Taxes

\$102 million income tax paid

Sustainable Supply Chain Management

New suppliers committed to our procurement standards

75% of purchasing volume sourced from OECD countries

Conflict mineral inquiries for all direct suppliers



Ethics in R&D

Global procedures for clinical studies in place (Declaration of Helsinki, GCP, ISO20916)

Data Security

Processes are based on ISO 27001

Zero incidents



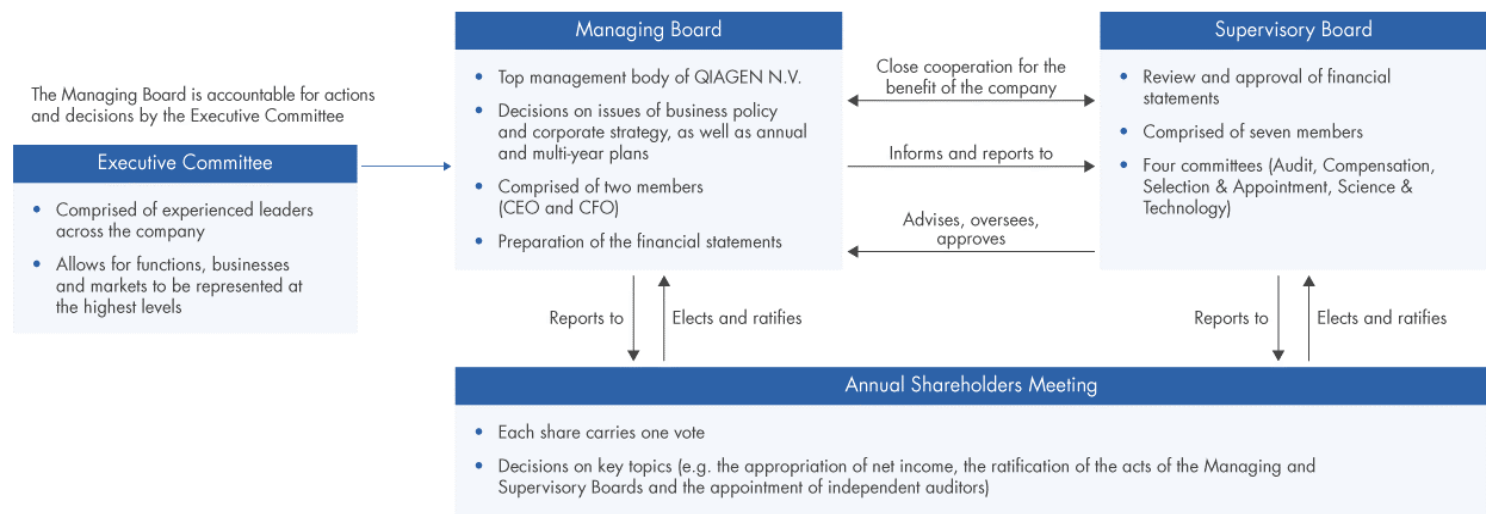
Quality and Product Safety

94.4 / 100 customer experience indicator

0.08 % of products affected from a total number of 6 recalls



Governance: QIAGEN operates under a two-tier corporate structure



Governance: International leadership team with over 200 years of combined industry experience



Executive Committee



Chief Executive Officer

Thierry Bernard
Joined 2015



Chief Financial officer

Roland Sackers
Joined 1999



Molecular Diagnostics

Jean-Pascal Viola
Joined 2005



Human Resources

Stephany Foster
Joined 2005



Life Science

Thomas Schweins
Joined 2004



Bioinformatics

Jonathan Sheldon
Joined 2018



Global Operations

Antonio Santos
Joined 2022

Supervisory Board



Chair

Lawrence A. Rosen
Joined 2013



Metin Colpan
Joined 2004



Toralf Haag
Joined 2021



Elaine Mardis
Joined 2014



Stephen H. Rusckowski
Joined 2023



Thomas Ebeling
Joined 2021



Ross Levine
Joined 2016



Eva Pisa
Joined 2022



Elizabeth E. Tallett
Joined 2011

Governance: Scientific Advisory Board



Members



Prof. Dr. Ross Levine

Chair



Dr. Metin Colpan

Chair



Dr. Peter Kaspar

Leadership positions at Roche Diagnostics and bioMérieux during career in diagnostics, Life Sciences and pharmaceuticals



Dr. Neville Sanjana

Core Faculty Member at the New York Genome Center and Assistant Professor at New York University



Prof. Patrice Nordmann

Chair of the Medical and Molecular Microbiology Department and other roles at University of Fribourg, Switzerland



Dr. Sarah Teichmann

Head of cellular genetics at the Wellcome Sanger Institute and director of research at Cavendish Laboratory, University of Cambridge



Dr. Rick Bright

Former CEO of the Pandemic Prevention Institute, Deputy Asst Secretary for Preparedness and Response and Director of BARDA⁽¹⁾

Ensuring QIAGEN remains at the cutting edge in the Life Sciences and Molecular Diagnostics

Your contacts



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Calendar

Q3 2023 results	October 2023
Q4 and FY 2023 results	February 2024

Share information

NYSE:	QGEN
Frankfurt:	QIA
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WKN:	A2DKCH



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