

General Assembly of the European Liquid Biopsy Society (ELBS)

28th of October 2022

Montpellier, France

Introduction of new ELBS members

Introduction of new members

15:00 – 15:30		Networking Coffee
15:30 – 16:15	Brief introduction of new ELBS members (2022)	Moderation: Catherine Alix-Panabières, Klaus Pantel Volition (<i>Belgium</i>) MGZ München (<i>Germany</i>) KU Leuven (<i>Belgium</i>) Merck (<i>Germany</i>) AIT Austrian Institute of Technology (<i>Austria</i>) University Medical Center Schleswig-Holstein (<i>Germany</i>) CIBER Consortium (<i>Spain</i>) Nonacus (<i>UK</i>) University of Crete (<i>Greece</i>)

Volition

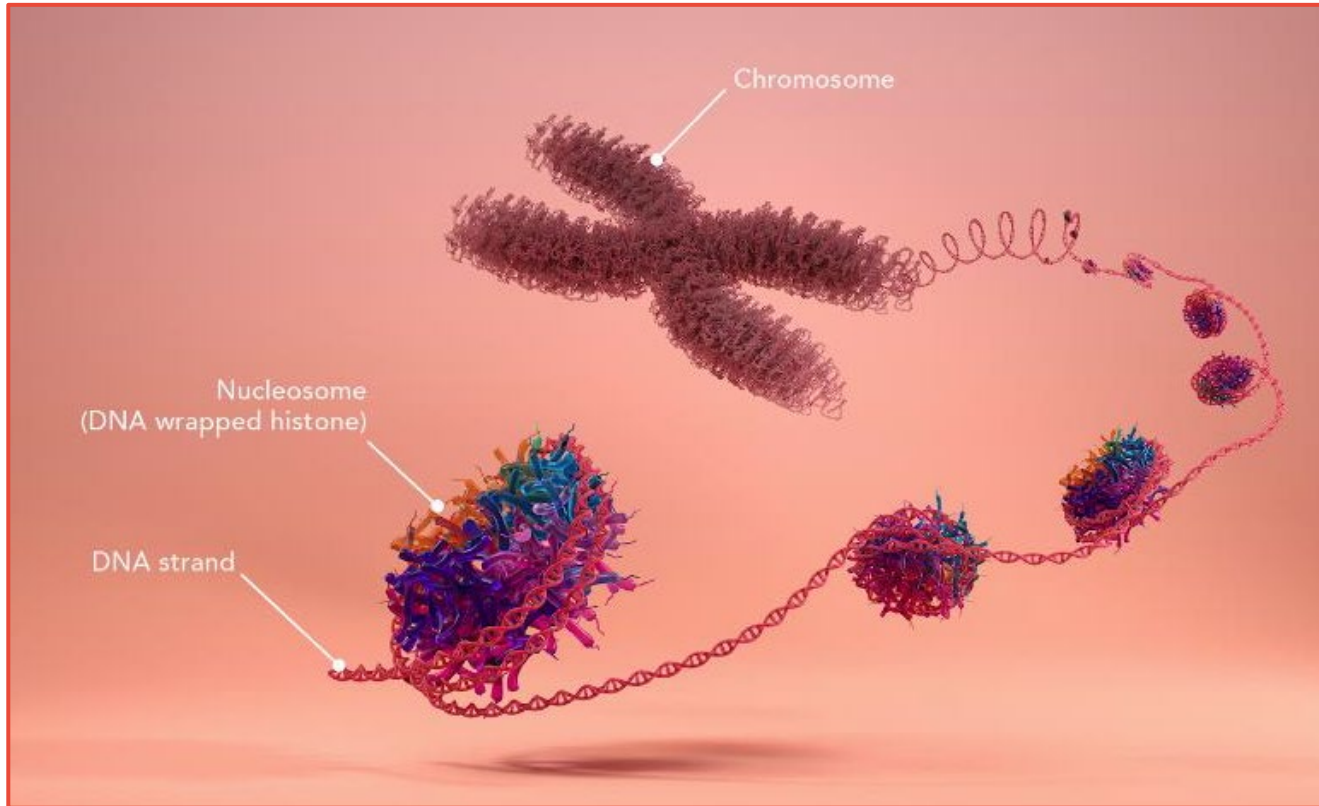
Frédéric Wuilque

Product Life Cycle Manager Oncology

Volition

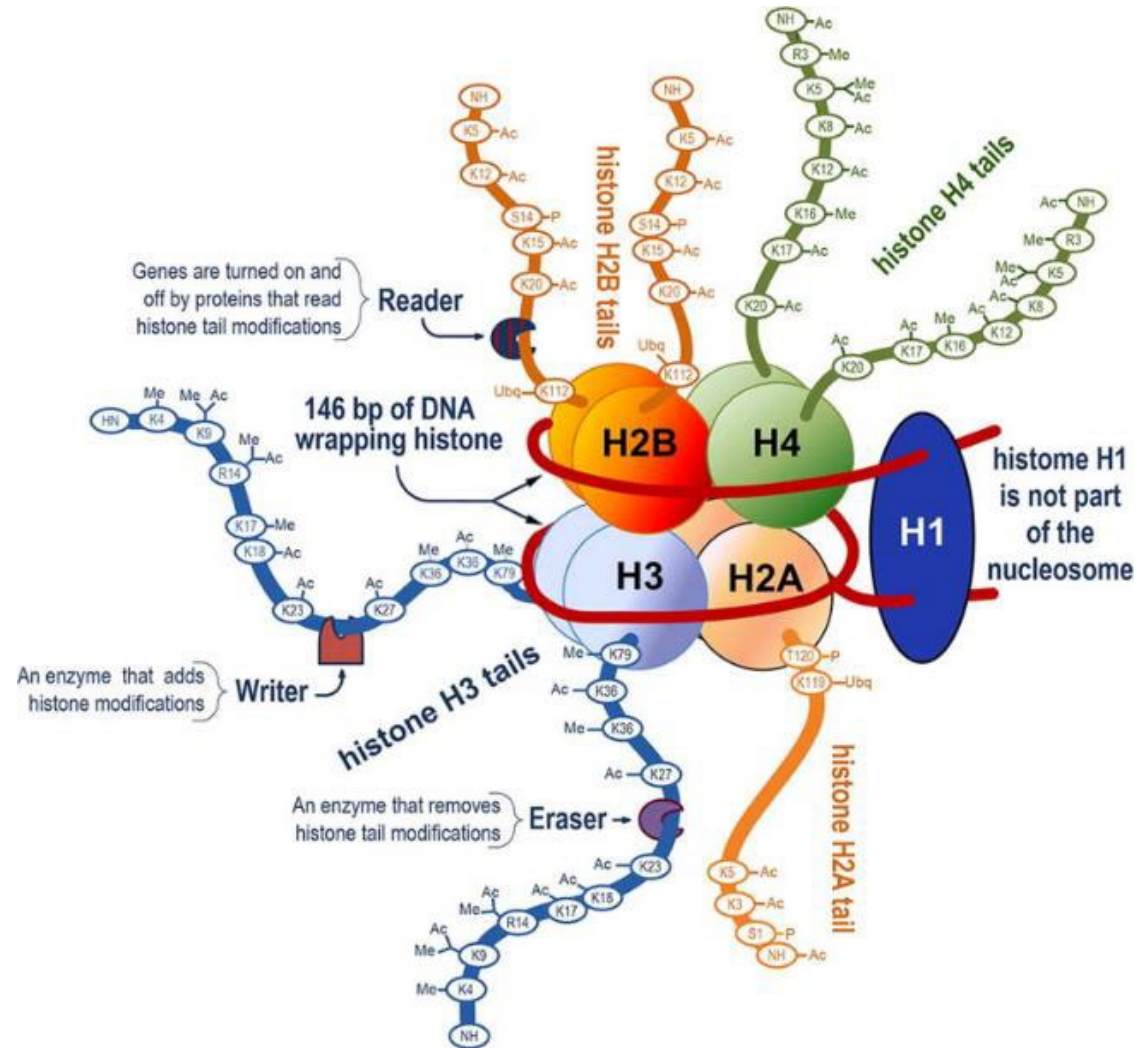
Nu.Q[®] Discover

ELBS 2022

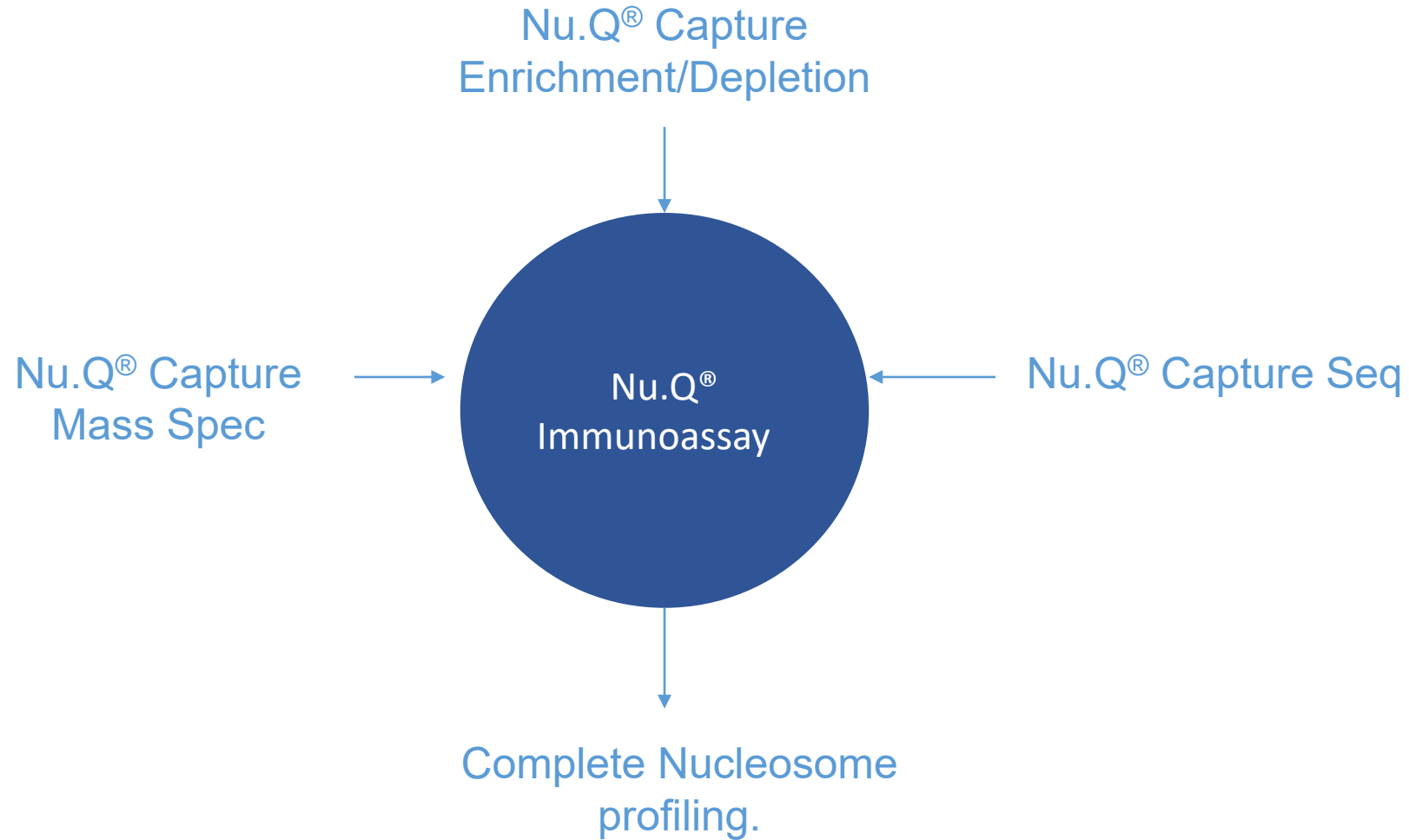


- Cancer & cell death results in chromatin fragmentation and release of nucleosomes into the blood.
- Nucleosomes contain >200 possible modifications that regulate every fundamental cellular process.
- Measuring nucleosome levels and modifications in circulation have the potential to be both prognostic and diagnostic markers for disease.

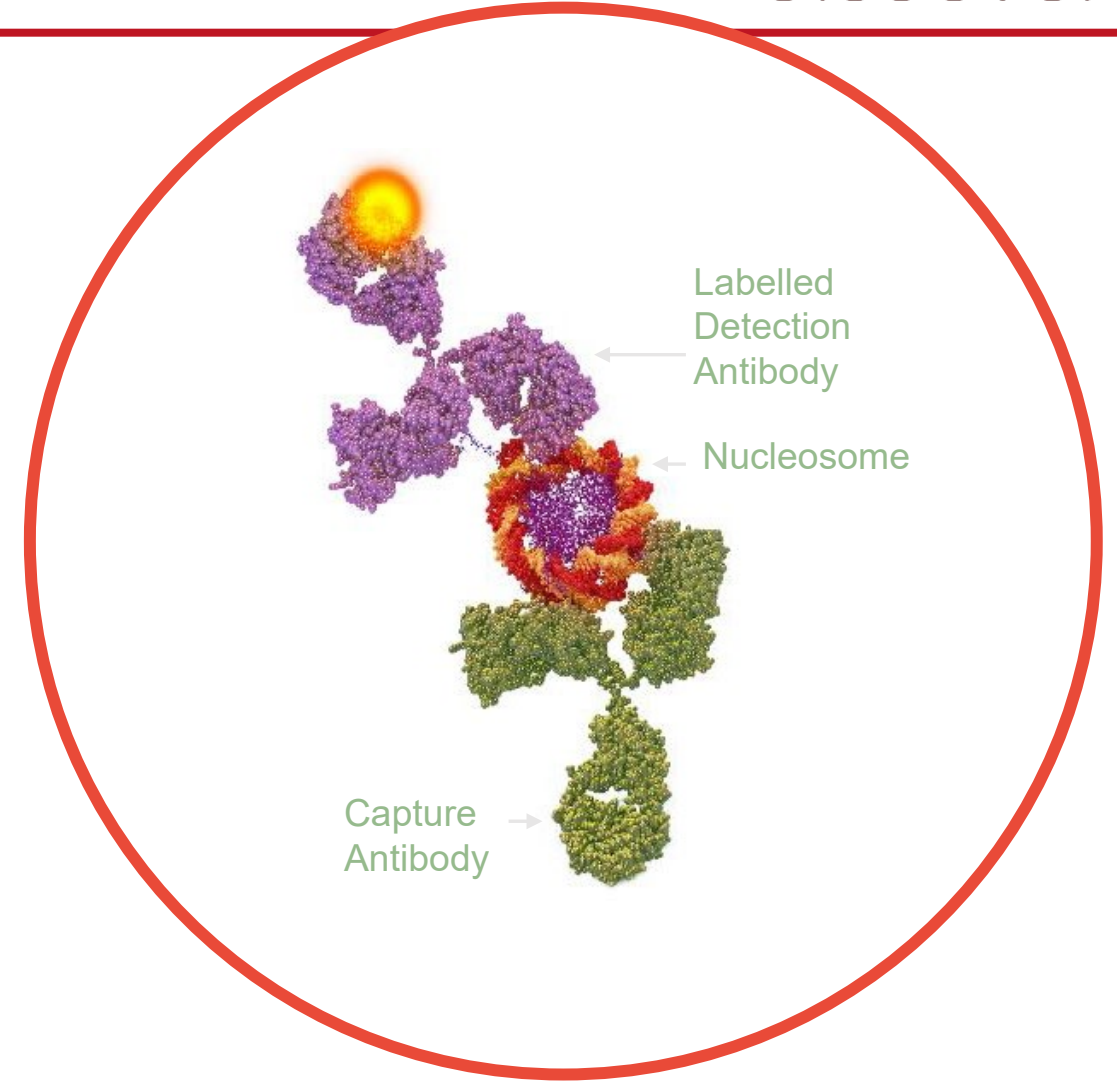
Circulating nucleosome as early biomarkers?



- Introducing Nu.Q[®] Discover



- Determine levels of circulating nucleosomes
- Profiles nucleosome epitopes
 - Histone post translation modifications
 - Histone variants
 - DNA modifications
- Developed according to CLSI guidelines
- Easy to use:
 - Plasma



- 13 Nu.Q[®] quantitative immunoassays developed i10 (IDS) automated platform
- Analytical validation following the CLSI guidelines
- Standard curves
- iQCs

Nu.Q [®] V	NU.Q [®] M - Methylation	Nu.Q [®] M - Acetylation	Nu.Q [®] M - Other PTMs	Nu.Q [®] - mutation
H3.1*	H3K27Me3	H3K14Ac	H3S10Ph	H3K27M
	H3K36Me3	H4PanAc	pH2AX	
	H3K4Me2	H3K9Ac	H3R8Cit	
	H3K9Me3	H3K27Ac		

* Available also on ELISA plates

ELISA



RUO

CE
IVD

ChLIA
Random-
access



ids

Volition

nu.q
nets

CE
IVD

POC



Coming
soon!

- Preclinical studies
 - Drug discovery
 - Target validation
 - Pharmacodynamic biomarkers
- Clinical studies:
 - Diagnostics (aid of diagnosis and/or early detection)
 - Prognostics biomarkers / Monitoring disease severity
 - Treatment monitoring
 - Treatment selection
 - CDx

Epigenetic Inhibitors in clinical research

HDAC*i*

PARP*i*

Ds DNA
Damage

DNMT*i*

EZH2*i*

KMT*i*

Preclinical studies – Animal models, cell lines

Nu.Q®
Immunoassays

- Cell death assessment
- Epigenetic profiling
- Variation histone PTMs upon drug treatment

Cell Culture



Supernatant

Chromatin
extract

Mouse / Rat



Rabbit



Pig



Dog



Human





**Thank You for your
interest**

Contact:
Sales@volition.com

MGZ München

Ariane Hallermayr

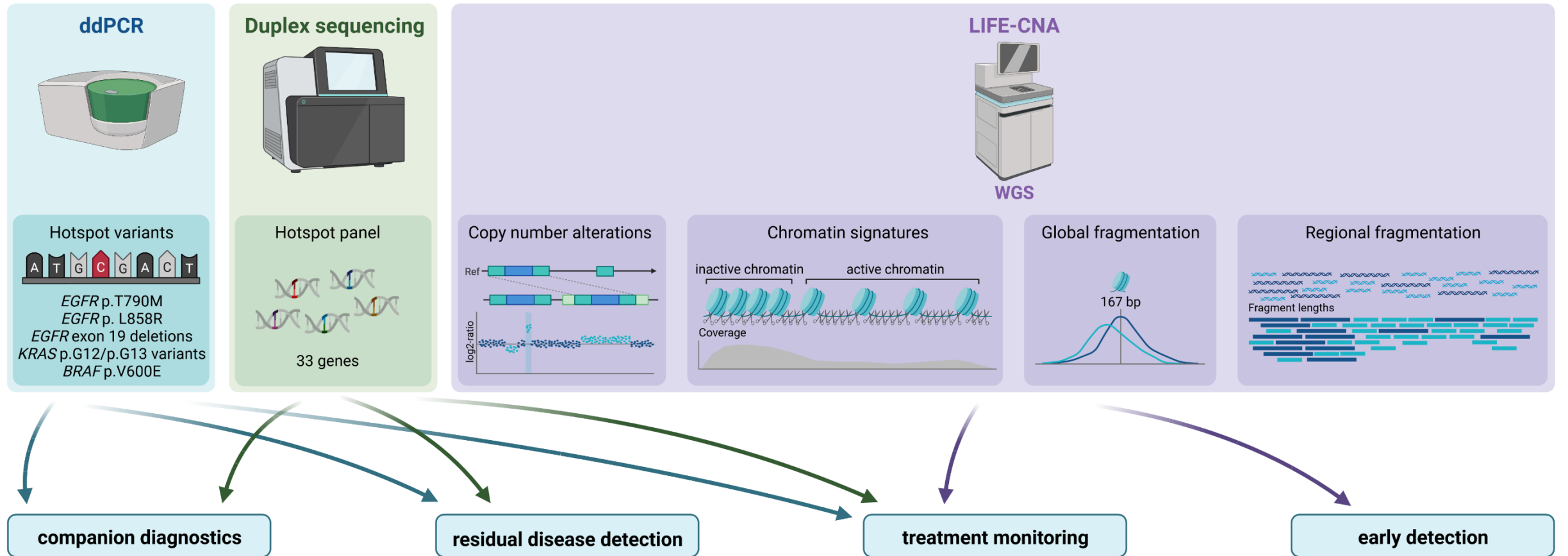
R&D - Technical Strategy

MGZ – Facts and figures

- founded in **2000** by *Prof. Dr. Elke Holinski-Feder*
- Since **2013** in partnership with *Prof. Dr. Angela Abicht*
- Since **2021** in partnership with *Dr. Teresa Neuhaus*
- Genetic counseling
- Human genetics laboratory
- Figures 2021:
 - Genetic counseling: > **4,500**
 - Samples: > **18,000**
 - Exomes: > **8,000**
 - Staff: > **160**
 - 18 clinicians
 - 25 scientists
 - 5 bioinformaticians



Liquid Biopsy at MGZ



KU Leuven

Joris Vermeesch

Head of the Laboratory for Cytogenetics and Genome Research

Research Areas:



- *Foetal & maternal health*



- *Cancer screening & diagnostics*

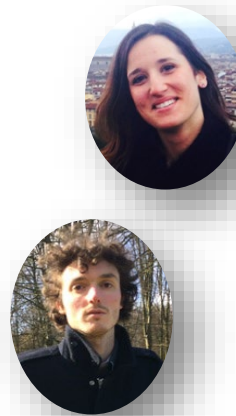


- *Transplantation health & immunology*



- *Population & patient stratification*

The Liquid Biopsy team:



*Dr. Hegel
Hernandez-Lopez

Team collaborators:

Prof. Y. Moreau
Prof. T. Kivisild
Prof. I. Cleynen
Prof. B. Thienpont

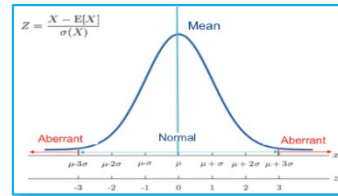
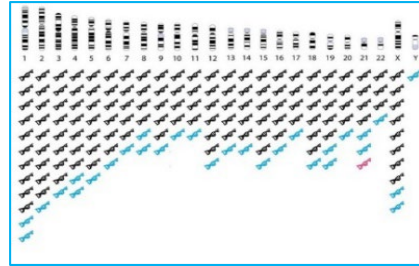


Clinical team:

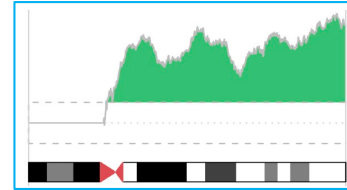
Prof. I. Vanden Bempt
Prof. F. Amant
Prof. S. Tejpar
Prof. P. Vandenberghe
Prof. D. Timmerman
Dr. K. Punie
Prof. M. Naesens



In-house genome-wide NIPS pipeline



2013



Published: 14 January 2015

Noninvasive prenatal testing using a novel analysis pipeline to screen for all autosomal fetal aneuploidies improves pregnancy management

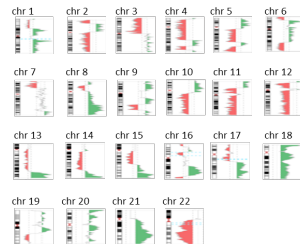
Baran Bayindir, Luc Dehaspe, Nathalie Brison, Paul Brady, Simon Ardui, Molka Kammoun, Lars Van der Veken, Klaske Lichtenbelt, Kris Van den Bogaert, Jeroen Van Houdt, Hilde Peeters, Hilde Van Esch, Thomy de Ravel, Eric Legius, Koen Devriendt & Joris R Vermeesch

European Journal of Human Genetics **23**, 1286–1293 (2015) | [Cite this article](#)

Incipient cancer detection during NIPS



Pregnant



Brief Report

JAMA Oncology

Presymptomatic Identification of Cancers in Pregnant Women During Noninvasive Prenatal Testing

Frédéric Amant, MD, PhD; Magali Verheek, MD; Iwona Wlodarska, PhD; Luc Dehaspe, PhD; Paul Brad, Nathalie Brison, PhD; Kris Van den Bogaert, PhD; Thomas Tousseyn, MD, PhD; Philippe Moerman, Patrick Neven, MD, PhD; Patrick Berteloot, MD; Peter Vandenberghe, MD, PhD; Eric Legius, MD

2015

Non-invasive detection of genomic imbalances in Hodgkin/Reed-Sternberg cells in early and advanced stage Hodgkin's lymphoma by sequencing of circulating cell-free DNA: a technical proof-of-principle study

Peter Vandenberghe, Iwona Wlodarska, Thomas Tousseyn, Luc Dehaspe, Daan Dierckx, Magali Verheek, Anne Uytendaele, Oliver Bechter, Michel Delforge, Vincent Vandecasteele, Nathalie Brison, Gregor EG Verhoef, Eric Legius, Frederic Amant*, Joris R Vermeesch*



eClinicalMedicine

Part of THE LANCET Discovery Science

RESEARCH PAPER | VOLUME 35, 100856, MAY 01, 2021

Comprehensive genome-wide analysis of routine non-invasive test data allows cancer prediction: A single-center retrospective analysis of over 85,000 pregnancies

Liesbeth Lenaerts, PhD • Nathalie Brison, PhD • Charlotte Maggen, MD • Leen Vancollie, PhD • Huiwen Che, MSc • Peter Vandenberghe, MD, PhD • et al. [Show all authors](#) • [Show footnotes](#)

Open Access • Published: May 13, 2021 • DOI: <https://doi.org/10.1016/j.eclim.2021.100856>



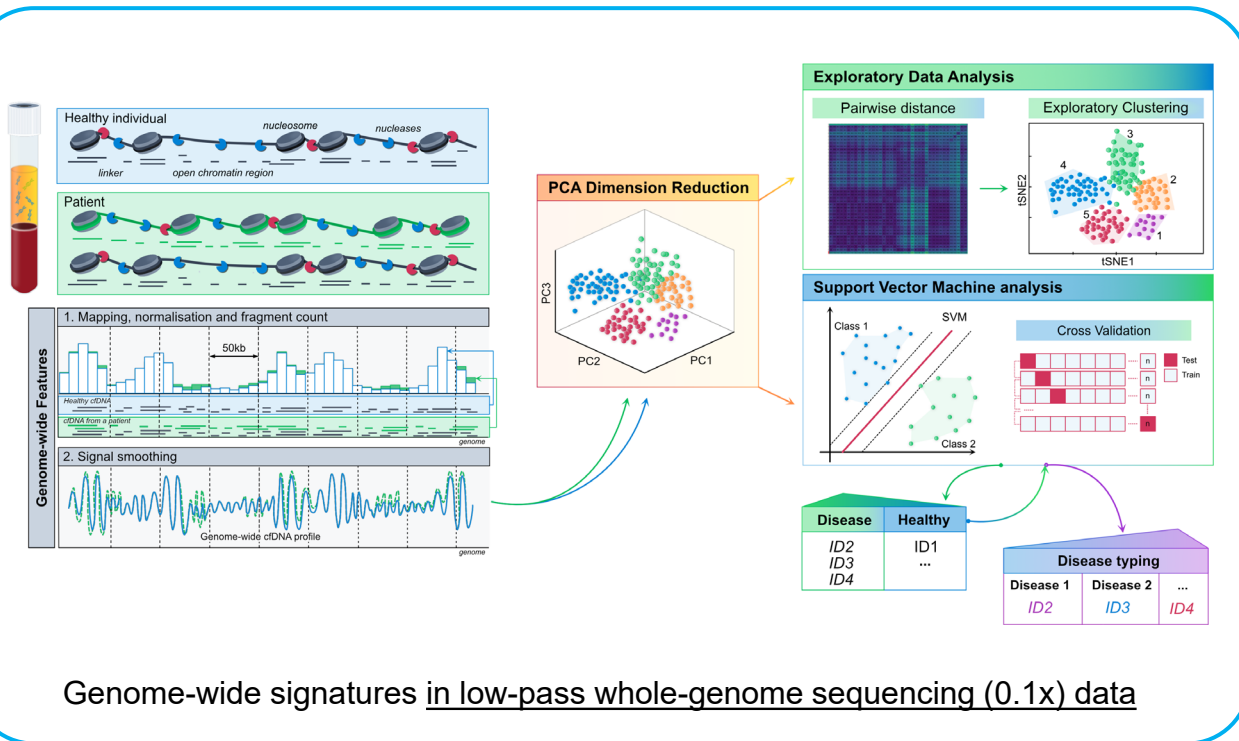
Cancers in pregnancy (WP6 lead)

CAN.HEAL

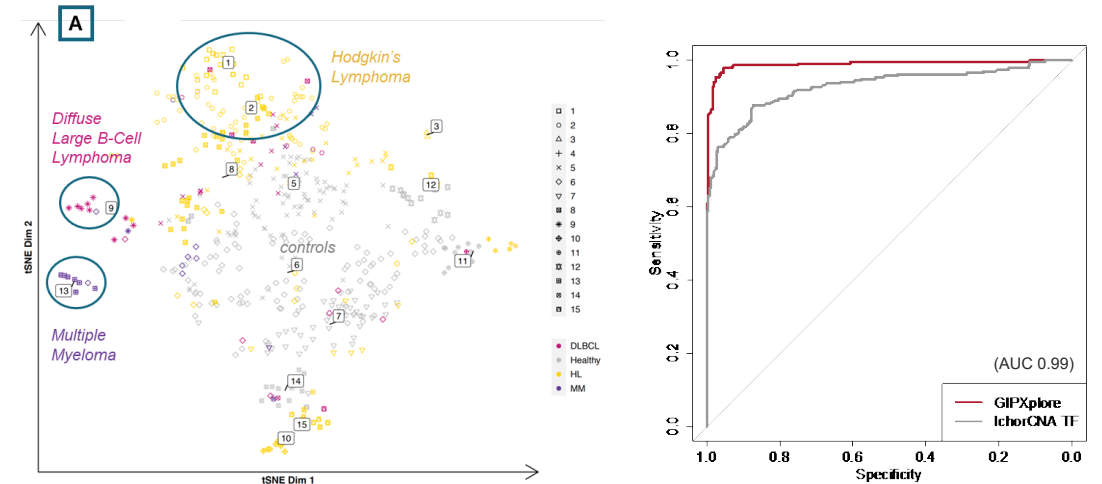


- Establishment of EU-wide NIPS network
- Guidelines for downstream management of NIPS results suspicious of cancer
- Model towards population-wide cancer screening

GIPXplore: a generic approach for unbiased identification of cfDNA signatures



GIPXplore identifies cancer- and type-specific signals



- Hematological malignancy detection with 92% sensitivity at 98% specificity
- An overall accuracy of 85% cancer type prediction

Looking for collaborations!

Merck

Andreas Kloetgen

Principal Scientist Clinical Genomics

Healthcare | Global Development | Biometrics & Precision Medicine | Translational Medicine

- Merck is a leading science and technology company operating across healthcare, life science and electronics
 - Around 60,000 employees worldwide
 - In 2021, Merck generated sales of € 19.7 billion in 66 countries.
 - From advancing gene editing technologies and discovering unique ways to treat the most challenging diseases to enabling the intelligence of devices – the company is everywhere
-
- Merck has been founded in 1668. The founding family remains the majority owner of the publicly listed company.
 - Merck holds the global rights to the Merck name and brand. The only exceptions are the United States and Canada, where the business sectors of Merck operate as EMD Serono in healthcare, MilliporeSigma in life science, and EMD Electronics.



Merck KGaA Headquarters, Darmstadt, Germany (merckgroup.com)



Engel Pharmacy in Darmstadt, Germany (merckgroup.com)

**R&D - Clinical Biomarkers and Companion
Diagnostics**



Juergen Scheuenpflug
Global Head Clinical Biomarkers and
Companion Diagnostics



Zheng Feng
Global Head Clinical Genomics



Andreas Kloetgen
Subject Matter Expert Clinical Genomics

Application:

- Longitudinal disease monitoring
- Prospective patient enrollment
- Various solid tumors

Technology:

- cfDNA and cfRNA from plasma samples
- Panel-based/whole-genome NGS, ddPCR

Publications:

1. Le et al., *Landscape and Clonal Dominance of Co-occurring Genomic Alterations in Non-Small-Cell Lung Cancer Harboring MET Exon 14 Skipping*, JCO Precis Oncol 2021 Dec 13;5:PO.21.00135.
2. O'Rourke et al., *Fit-for-purpose quantitative liquid biopsy-based droplet digital PCR assay development for detection of programmed cell death ligand-1 (PD-L1) RNA expression in PAXgene blood samples*, PLoS One. 2021 May 10;16(5):e0250849.

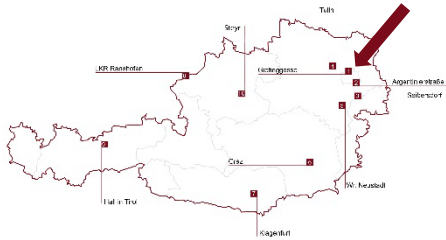


AIT Austrian Institute of Technology

Christa Nöhammer

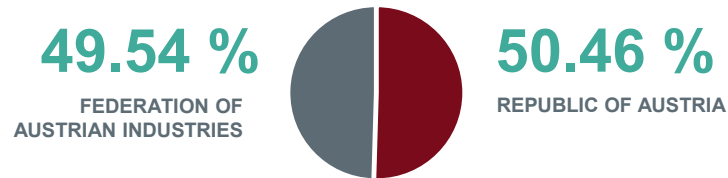
Principal Scientist Clinical Genomics

Healthcare | Global Development | Biometrics & Precision Medicine | Translational Medicine



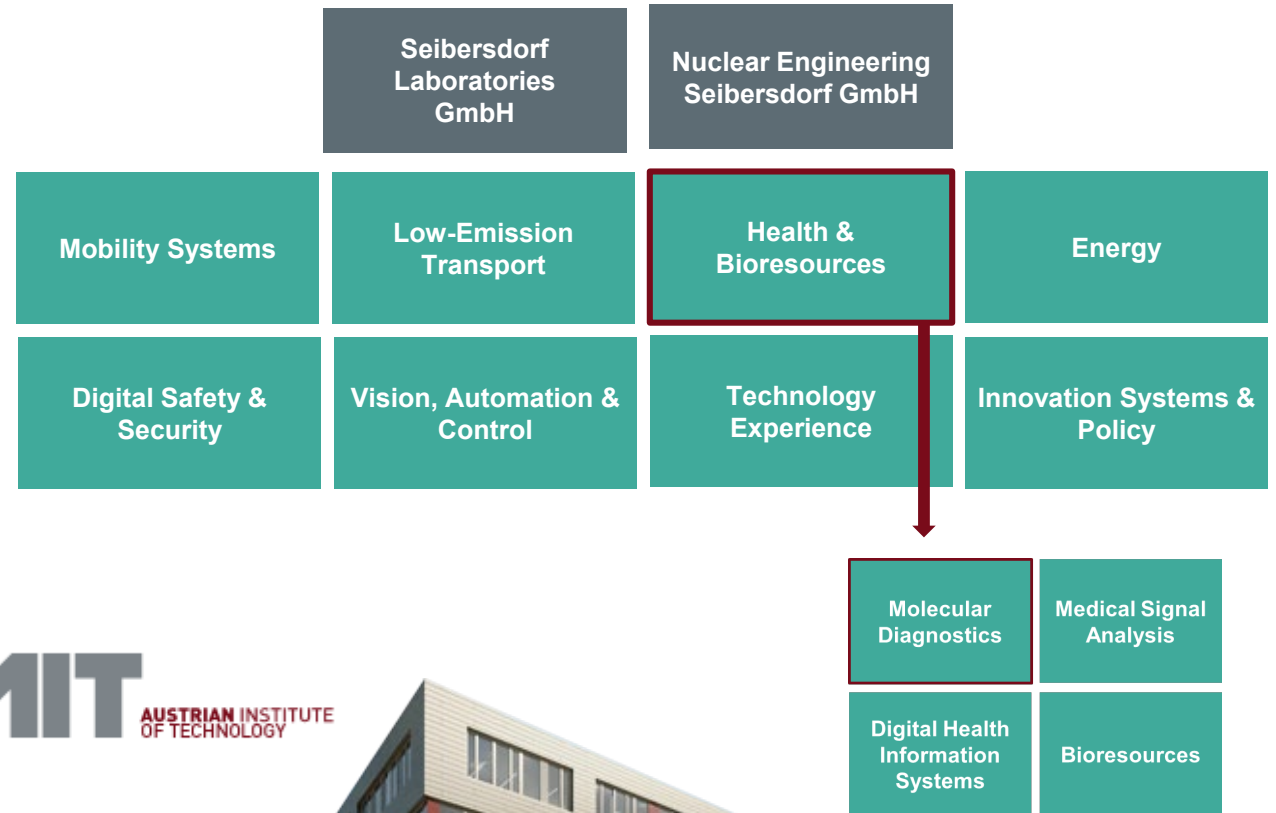
Austria's largest RTO

OWNERSHIP STRUCTURE

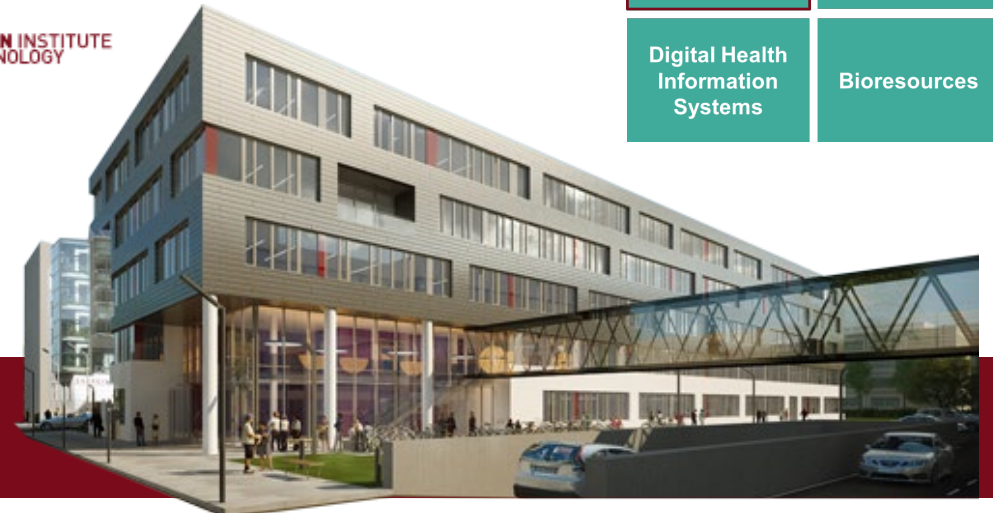


over
1.400
employees

TOTAL REVENUES
176 m EUR



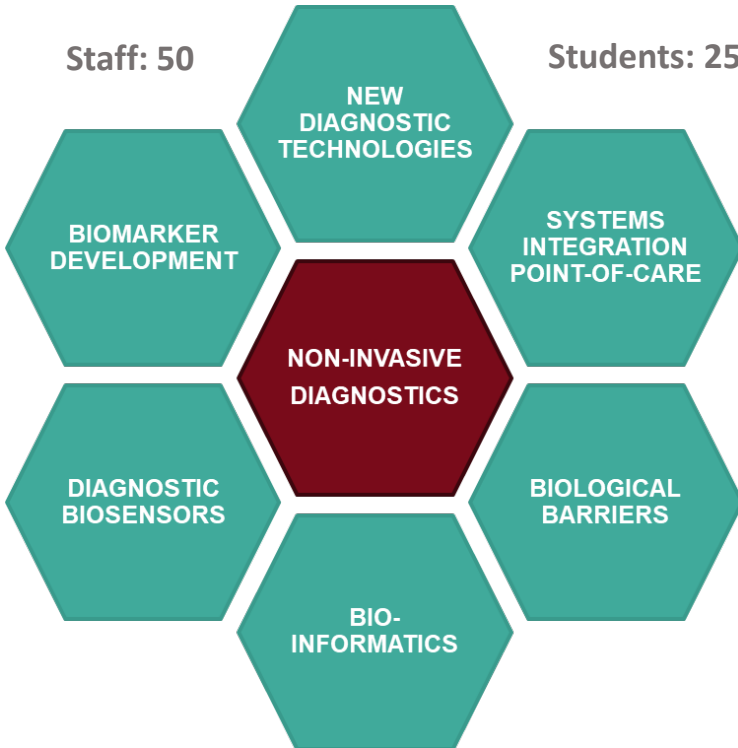
AIT Austrian Institute of Technology



CORE COMPETENCES MD Unit

Staff: 50

Students: 25



- **Liquid biopsy Biomarkers** (blood, saliva, extracellular fluids / EVs) for **minimally or non-invasive diagnostics** to create point of care solutions.

AIM: IMPROVING MINIMAL INVASIVE DIAGNOSTICS

// DNA

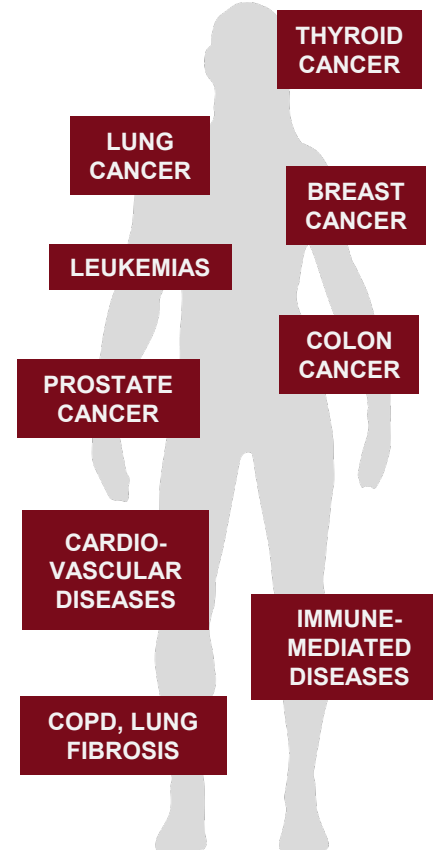
- Genotyping
- DNA Methylation
- Genomic Abberations

// RNA

- Gene Expression
- miRNA
- ncRNA

// PROTEIN

- Auto Antibody Profiling
- Protein Panel Assays



// DNA MICROARRAY // NEXT GENERATION SEQUENCING

- Whole genome
- Targeted

// qPCR

// MICROFLUIDIC qPCR

// PROTEIN ARRAYS

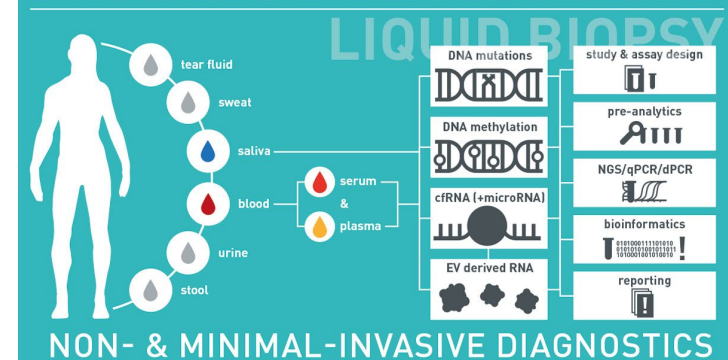
// PEPTIDE ARRAYS

// BIOSTATISTICS

// BIOINFORMATICS

// SOFTWARE DEVELOPMENT

ASSAY DEVELOPMENT & ANALYSIS SERVICES



- In our academical or industrial projects we act as **technology providing** partner.

University Medical Center Schleswig-Holstein (UKSH)

Eva Dazert

Scientific member and coordinator of the Liquid Biopsy Group



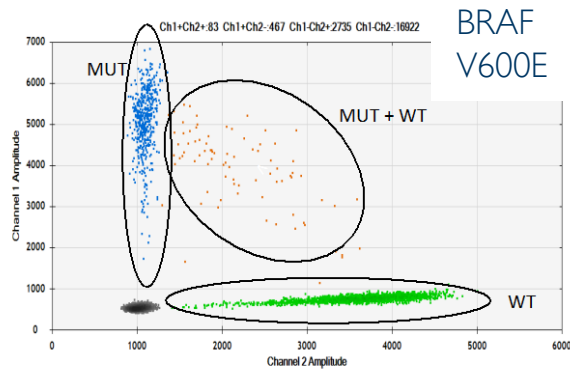
Liquid Biopsy Group
Prof. Nikolas von Bubnoff
Clinical Hematology and Oncology
UKSH
Institute for Biomedical Research
Lübeck, Germany



UNIVERSITÄTSKLINIKUM
Schleswig-Holstein



Droplet Digital PCR (ddPCR)

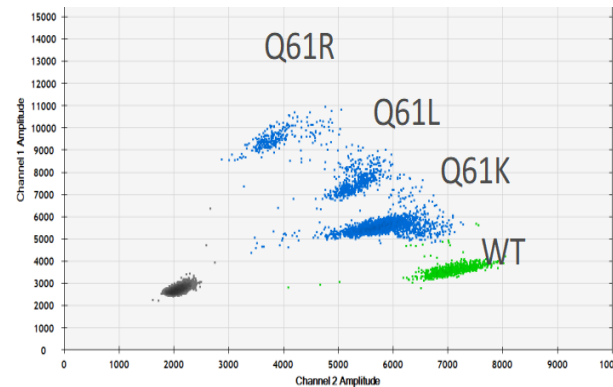


- 2ml Plasma
- 50 custom LNA assays
- Accred. RfB 2021
- Sens: up to 1:10.000

STILLA



Multiplex ddPCR example NRAS Q61

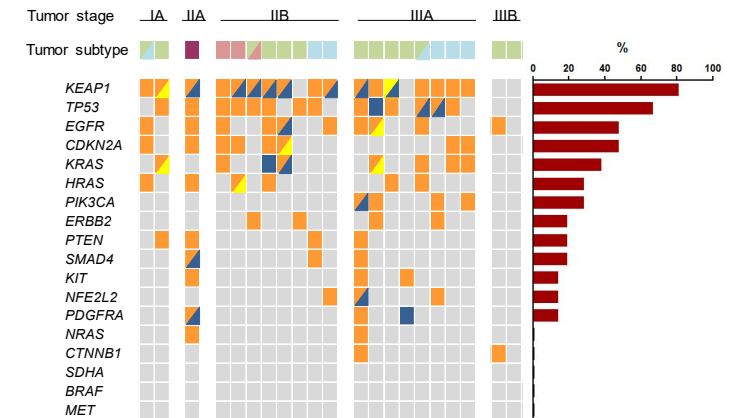


- Multiplexing
- Microfluidics, MP, bleaching
(Projects with Hahn-Schickard)
- up to 3-, 6-, 12-plex



Source: velixX / TDC

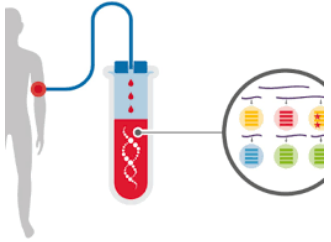
Custom target-capture NGS panel (18-50 genes)



- targeted panel VS 2.0 in development
- harmonization within EXLIQUID consortium

illumina





Third-party funded
studies

Multi-centric institutional studies



BMBF

OUTLIVE-CRC

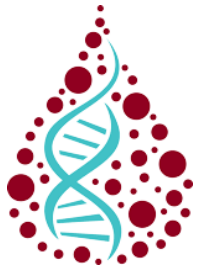
CRC < 50ys

- Hereditary alpha tryptasemia
- ctDNA Melanoma

HECTOR

HECTOR

GIST



DKTK

EXLIQUID

MTB

Institutional studies

EU4health

Can.Heal

Tech/clin validation

- Uveal melanoma
- Mastocytosis
- Bile duct

AiF

MeLB

Melanoma st IIB-III

Collaborations highly welcome !

OUTLIVE Consortium: Liquid Biopsy for tertiary prevention in young patients with CRC

MISSION

- Detect CRC recurrence early
- Identify risk patients for CRC recurrence

GOAL

- New tertiary prevention strategy
- Micro-fluidic automated liquid biopsy blood testing plus nutritional medical intervention



OUTLIVE-CRC
Liquid Biopsy & Nutrition in CRC Prevention



Colorectal cancer
at the age of ≤ 50 ys:
A distinct entity!

Prof. Sina
Clinical research
& Metabolomics

Dr. Derer
Basic research
& Metabolomics
Franziska Axt

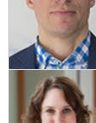
Prof. v. Bubnoff
Genomics

Prof. Katalinic
Epidemiology

Prof. Deck
Epidemiology

Prof. Gemoll
Proteomics

Dr. Oberländer
CRC biobank



Institute of
Nutritional Medicine
University Hospital Schleswig-Holstein
Campus Lübeck

Department of
Hematology
and Oncology

Institute for
Social
Medicine and
Epidemiology

Section for
Translational Surgical
Oncology and
Biobanking

Section for
Translational Surgical
Oncology and
Biobanking

**UK
SH**

~6.8 Mio €/
7 years funding

dkfz.



**Hahn
Schickard**



Prof. Busch
Bioinformatics



Prof. Sülmann
Epigenomics &
microbiomics

perfood
Your Food. Your Health.
MillionFriends



Dr. Jülg
Automated blood
tests (Pre-analytics)



Dr. Hutzenlaub
Automated blood tests
(Analytics)



Prof. Zengerle
Microfluidics research



Bundesministerium
für Bildung
und Forschung

THE **INUM.**

Liquid Biopsy Working Module of the CIBERONC
Spanish National Cancer Network

Rodrigo Toledo

PhD, MBA at the Vall d'Hebron Institute of Oncology

- 45 Meetings**
 - 4 General Meeting**
 - 3 Young Researchers Meeting**
 - 3 Workshops**
 - 35 Program Meetings**
- > 2500 Scientific publications**
- >15 Internal projects funded**
- >10 External projects leaded**
- >200 Training and mobility grants**



Rodrigo Toledo, PhD



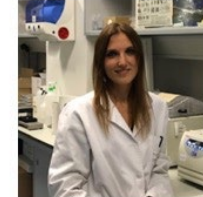
Javier Hernández Losa, PhD



Julie Earl, PhD



Laura Muínelo, PhD



Noelia Tarazona MD, PhD



Silvia Calabuig, PhD



María Eugenia Sarasquete, PhD



Marta Rodríguez, PhD



Sara López-Tarruella, MD, PhD



Karmele Valencia Leoz, PhD



Beatriz Bellosillo, PhD



Marta Dueñas, PhD

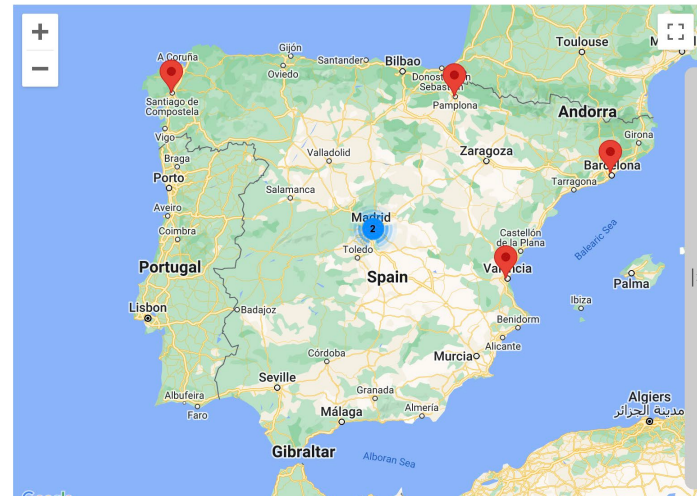
- Unify the resources and protocols of CIBERONC.
- Facilitate communication and organization among the members.
- **Develop transversal and international collaborative projects.**

HOME ABOUT US FOR PATIENTS FOR RESEARCHERS ▾ ECOSYSTEM EVENTS CONTACT

PROTOCOLS

Plasma	Serum	leukocytes	CTCs
cfDNA	Exosomes	Platelets	

ECOSYSTEM



Principal investigator	MARTIN JIMENEZ, MIGUEL CB16/12 /00471
Center	Instituto Investigación Sanitaria Gregorio Marañón
Location	Calle del Dr. Esquerdo, 46, 28007 Madrid, España
Principal investigator	RAMON Y CAJAL AGÜERAS, SANTIAGO CB16/12/00363
Center	Fundación Hospital Universitario Vall d'Hebron - Institut de Recerca (VHIR)
Location	Edifici Mediterrània Hospital Universitari Vall d'Hebron, Passeig de la Vall d'Hebron, 119-129, 08035 Barcelona, España
Principal investigator	CAMPS HERRERO, CARLOS CB16/12 /00350
Center	Consorcio Hospital General Universitario Valencia
Location	Av. de les Tres Creus, 2, 46014



CIBERONC Liquid Biopsy Work Module Workshop
Madrid, May 26th - 27th, 2022

rtoledo@vhio.net



Nonacus

Gregory Maes

Business Development and Innovation Manager

NONACUS

Advancing Non-Invasive Healthcare



www.nonacus.com

Advancing Non-Invasive Healthcare

Our Mission

Detecting cancer earlier and informing patient outcomes through the deployment of a truly innovative liquid biopsy testing platform.

Our Vision

As a patient and customer centric company, we strive to deliver innovative genomic technologies which advance liquid biopsy diagnostics and improve cancer patient outcomes worldwide.

We will enable decentralised, cost effective and cutting-edge cancer genomics and democratise early cancer detection and monitoring globally.



Who we are – our ELBS team



Chris Sale

CEO

20 years commercial experience in Genomics Sales, Management and Business Development, including sales positions with Agilent and Illumina



Johan Vanderhoeven

Commercial Director

More than 15 years in sales and marketing positions in the life sciences sector. Long experience in oligonucleotide and probe design products as VP Sales at IDT.



Andrew Feber

Director of R&D
Early Detection & Surveillance

Over 20 years translational research experience in Oncology and Cancer Biology. Held various group leading positions at UCL and Royal Marsden NHS Foundation Trust in the Clinical Genomics space.



Gregory Maes

Business Development &
Innovation Manager

More than 20 years of research, innovation and business development experience in various life sciences Omics fields, ranging from applied evolutionary genomics to genomic medicine for personalized medicine

The **ELBS team** will participate in targeted **working groups**, initiate and leverage **research collaborations** and **clinical validation studies**, present **innovative solutions** developed in house for the LB community and showcase our **LB platform** for a broader use by all relevant stakeholders!

Challenges of working with cfDNA:

- Correct **blood collection** processing requires to **retain cfDNA fraction**
- **Only limited quantity of cfDNA available** from many samples, often 5-30ng total per blood tube
- **ctDNA relevant fraction** is only a small and variable proportion of the total cfDNA **extracted**

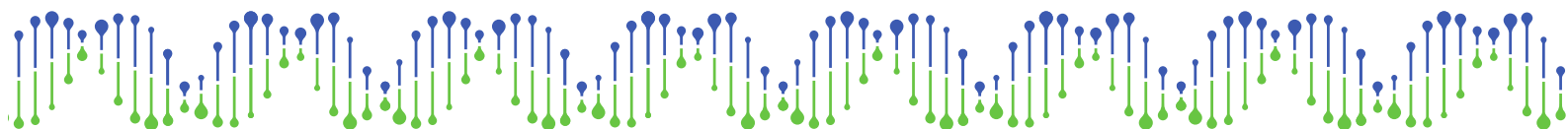
Pre-Analytical

- Low ctDNA amounts for early cancer detection or MRD, differential shedding rate of ctDNA by different cancers and tumor heterogeneity can result in **variable and very low VAF mutations**
- Next Generation Sequencing and PCR both have **intrinsic error rates** and for non-invasive applications; we must remove these errors to detect mutations below the background noise
- Longitudinal surveillance requires **personalized** and **cost-efficient** methods, applicable in various analytical environments (POC, LDTs, Core Facilities)

Analytical

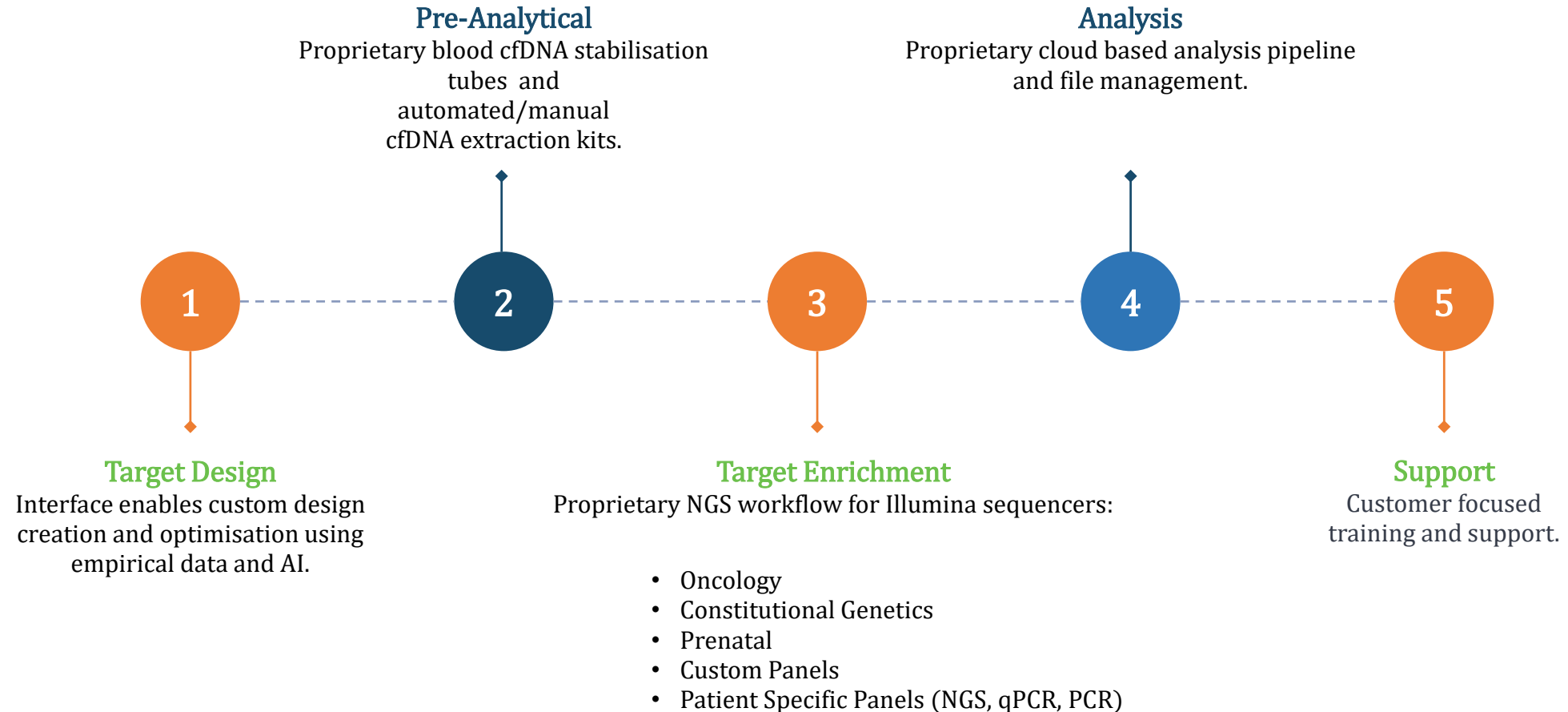
- Assay design, analysis and interpretation of results are commonly **disconnected**, leading to **suboptimal data quantities and quality** to be used in **SOC workflows**.

Interpretation



Our current Liquid Biopsy workflow:

The most sensitive, complete and robust non-invasive liquid biopsy workflow on the market



Oncology

Prenatal

npj | genomic medicine www.nature.com/npjgenmed

ARTICLE OPEN Check for updates

Sensitive screening of single nucleotide polymorphisms in cell free DNA for diagnosis of gestational tumours

Geoffrey J. Maher^{1,2,3}, Rosemary A. Fisher¹, Baljeet Kaur¹, Xianne Aguilar¹, Preetha Aravind¹, Natasha Cedeno¹, James Clark¹, Debbie Damon¹, Ehsan Ghorani¹, Adam Januszewski¹, Foteini Kalafonou¹, Ravindhi Murphy¹, Rajat Roy^{1,2}, Naveed Sarwar¹, Mark R. Openshaw^{1,2,3} and Michael J. Seckl^{1,2,3}

cancers MDPI

Brief Report

Utility of Circulating Tumor DNA for Detection and Monitoring of Endometrial Cancer Recurrence and Progression

Esther L. Moss^{1,2,3,4,*}, Diviya N. Gorsia¹, Anna Collins¹, Pavandeep Sandhu¹, Nalini Foreman¹, Anupama Gore², Joey Wood², Christopher Kent², Lee Silcock³ and David S. Guttery^{1,4,5,*}

BJUI
BJU International

Targeted deep sequencing of urothelial bladder cancers and associated urinary DNA: a 23-gene panel with utility for non-invasive diagnosis and risk stratification

Douglas G. Ward¹, Naheema S. Gordon¹, Rebecca H. Boucher¹, Sarah J. Pirrie¹, Laura Baxter¹, Sascha Ott¹, Lee Silcock¹, Celina M. Whalley¹, Joanne D. Stockton¹, Andrew D. Beggs¹, Mike Griffiths¹, Ben Abbotts¹, Hanieh Ijokipour¹, Fathimath N. Latheef¹, Robert A. Robinson¹, Andrew J. White¹, Nicholas D. James¹, Maurice P. Zeegers¹, K. K. Cheng^{1,*} and Richard T. Bryan¹

ELSEVIER COMPUTATIONAL AND STRUCTURAL BIOTECHNOLOGY JOURNAL
journal homepage: www.elsevier.com/locate/csbj

Mini Review

Applications and analysis of targeted genomic sequencing in cancer studies

Findlay Bewicke-Copley^{1,2}, Emil Arjun Kumar^{1,2}, Giuseppe Palladino¹, Koorosh Korfi¹, Jun Wang^{1,2}

F1000Research F1000Research 2019, 8:90 Last updated: 27 AUG 2019

RESEARCH ARTICLE Check for updates

Analysis of *CDKN1C* in fetal growth restriction and pregnancy loss [version 1; peer review: 2 approved]

Jenifer P. Suntharalingham^{1*}, Miho Ishida^{1*}, Federica Buonocore¹, Ignacio del Valle¹, Nita Solanky¹, Charalambos Demetriou¹, Lesley Regan², Gudrun E. Moore^{1*}, John C. Achermann^{1*}

VoxSanguinis International Society of Blood Transfusion

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Noninvasive fetal *RHD* genotyping to guide targeted anti-D prophylaxis—an external quality assessment workshop

Frederik Banch Clausen^{1,2}, Angela Natalie Barrett^{1,2}, The Noninvasive Fetal *RHD* Genotyping EQA2017 Working Group^{*}

bjh research paper

A novel non-invasive prenatal sickle cell disease test for all at-risk pregnancies

Julia van Campen¹, Lee Silcock², Shu Yau², Yvonne Daniel², Joo Wook Ahn^{1,4}, Caroline Ogilvie^{1,5}, Kathy Mann³ and Eugene Oteng-Ntim^{6,7}

Summary

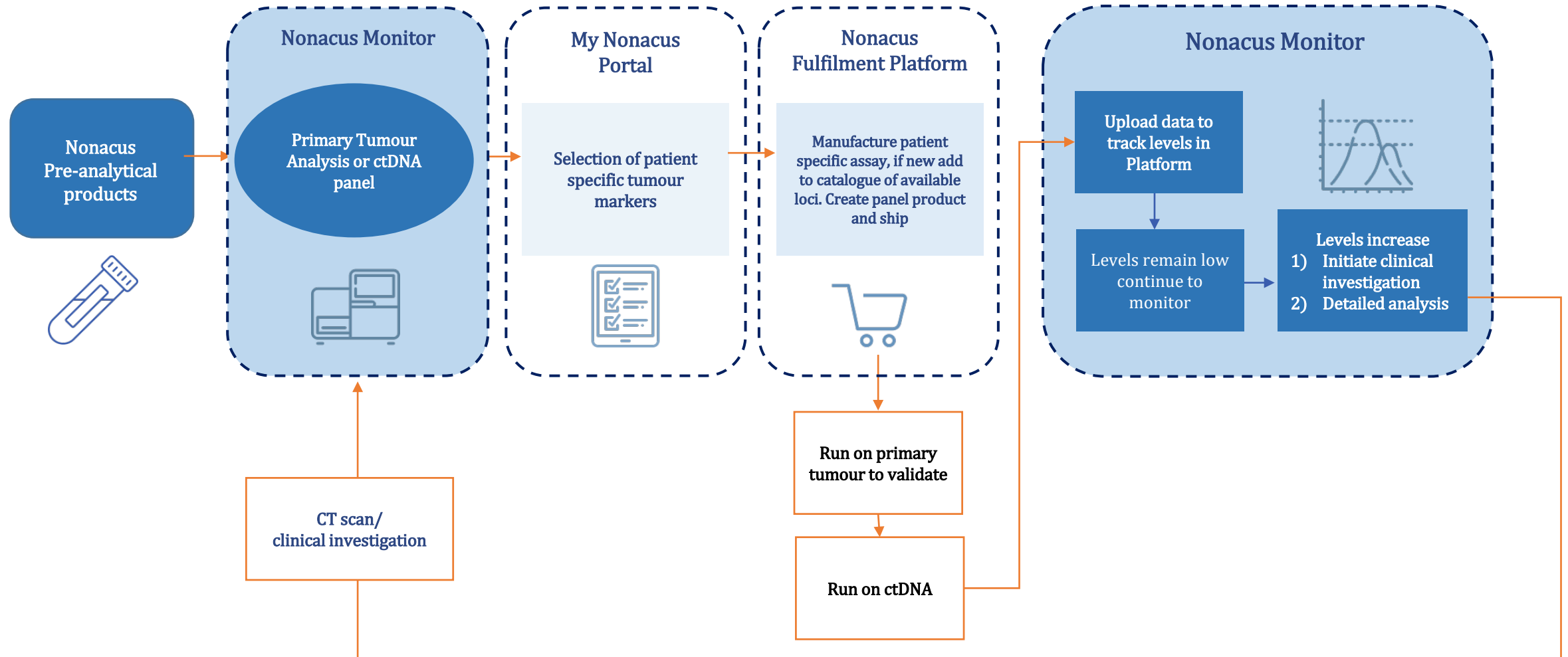
Sickle cell disease (SCD) is the most common genetic haematological disorder. The availability of non-invasive prenatal diagnosis (NIPD) is predicted to increase uptake of prenatal diagnosis for SCD, as it has no perceived

Clinical Research Article

Next-Generation Sequencing Reveals Novel Genetic Variants (SRY, DMRT1, NR5A1, DHH, DHX37) in Adults With 46,XY DSD

Federica Buonocore¹, Oliver Clifford-Mobley², Tom F. J. King³, Nicolò Strigioni¹, Elim Man¹, Jenifer P. Suntharalingham¹, Ignacio del Valle¹, Lin Lin⁴, Carlos F. Lagos⁴, Gill Rumsby⁵, Gerard S. Conway^{6*} and John C. Achermann^{1*}

The most sensitive, complete and robust non-invasive liquid biopsy workflow on the market:



The logo for NONACUS features the word in a bold, sans-serif font. The letter 'O' is white with a black circle inside. The letter 'A' is white and set against a green square background. The letter 'C' is white and set against a blue square background. The letters 'N', 'N', 'U', and 'S' are white.

NONACUS

Advancing Non-Invasive Healthcare

www.nonacus.com

A comprehensive NGS panel for translational and clinical research into bladder cancer

Targeting 451 somatic mutations found in 96% of bladder cancer cases, this panel has the potential to offer a **non-invasive alternative to cystoscopy** via urinary DNA analysis.

Non-invasive urine assay for profiling bladder cancer

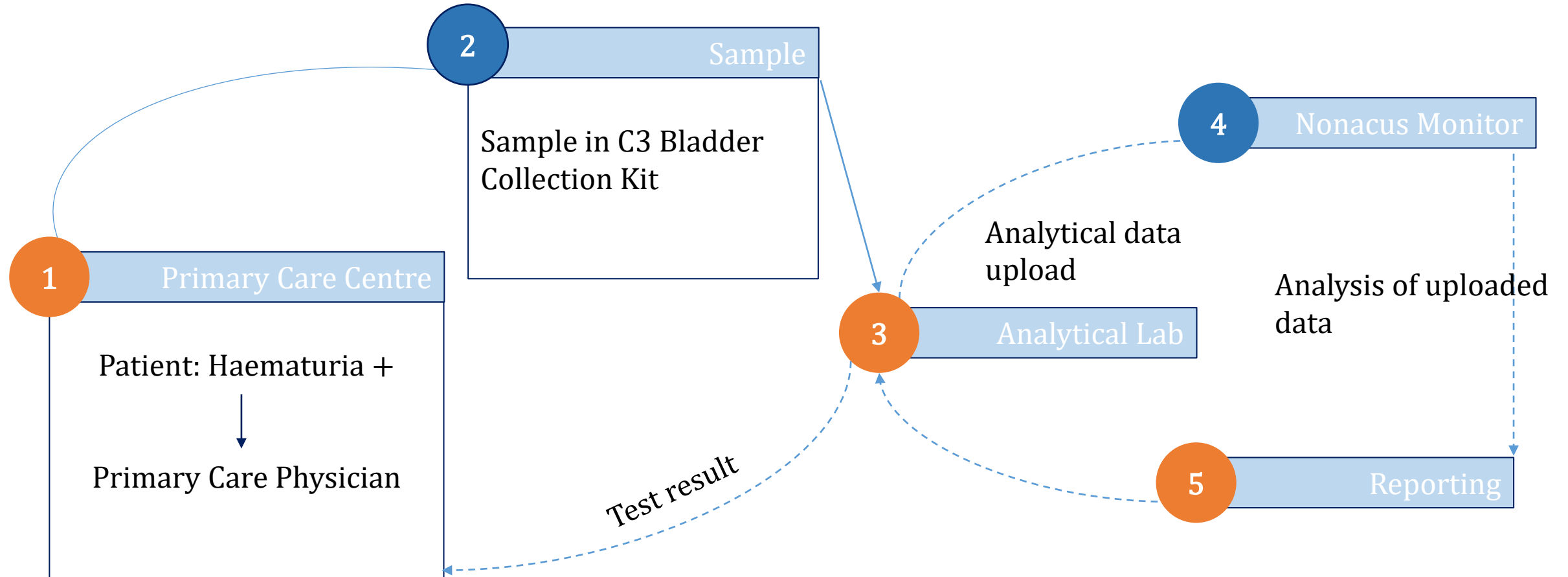
- Currently the main method for the detection of bladder cancer tumors is **flexible cystoscopy**, an invasive procedure that requires the insertion of a camera into the bladder. In the UK alone over 110,000 flexible cystoscopies are carried out each year, **88% of which turn out to be unnecessary**.
- Based on the ultra sensitive Cell3™ Target chemistry developed by Nonacus, this sequencing panel enables researchers to sequence the tumor DNA found in the urine of bladder cancer patients to raw read depths in excess of 20,000x.
- This depth of coverage provides the sensitivity and accuracy needed to offer a viable genomic alternative to flexible cystoscopy for the profiling of bladder cancer.

[Learn more](#)

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Sample/ Analysis Pathway:





Advancing Non-Invasive Healthcare

www.nonacus.com

University of Crete

Maria Papadaki

Research Associate

Laboratory of Translational Oncology (LTO), UoC - Affiliated to the Department of Medical Oncology (DMO), PaGNI

Department of Medical Oncology (DMO), University General Hospital of Heraklion (PaGNI), Crete, Greece

- ❑ **Medical staff** is consisted of 3 Academic faculty members, 6 Senior Oncologists and 5 oncology fellows in training.
- ❑ Each year, DMO evaluates approximately 1000 new cases, accepts 2500 hospital admissions, administrates 9000 treatments on an outpatient basis and 7500 patients are treated in the outpatient clinics.
- ❑ Expertise is provided for all **tumor types** including breast, gynecologic, lung, head and neck, gastrointestinal, melanoma and urological cancers.
- ❑ DMO has a **clinical trial unit** dedicated to the conduct of international and local trials.

Affiliated Laboratory of Translational Oncology (LTO), Faculty of Medicine, University of Crete, Greece

- ❑ **Scientific staff:** Molecular biologists, Biochemists and Technicians: 5 Post-doctoral fellows, 2 PhD candidates, 3 technicians, 4 BSc students
- ❑ **Liquid biopsy biobank:** breast, lung, prostate, colorectal and melanoma samples (enriched CTCs, PBMCs, platelets, plasma / availability of follow-up samples)
- ❑ **Equipment:** Parsortix system, CellSearch system, MACS technology, fluorescence and confocal microscopy, a 18-color Flow Cytometer (BD[®] LSR II), micro-dissectors, Real-Time PCR System (ViiA 7), droplet digital PCR (QX200 System), Ion Torrent PGM and the fully automated Idylla Biocartis platform (PCR-based)

❖ Tissue and plasma analysis for therapeutic decision making

- ✓ Identification of somatic mutations (NGS, ddPCR, Idylla™)
- ✓ Determination of microsatellite instability (MSI) (capillary electrophoresis)

❖ Translational research for the discovery of biomarkers and the exploration of metastasis and drug resistance mechanisms

- ✓ CTCs (enumeration, monitoring and phenotypic analysis - Parsortix system, ficoll-separation, fluorescence microscopy etc)
- ✓ ctDNA (mutational analysis-ddPCR)
- ✓ Plasma miRNAs (real-time RT-PCR)
- ✓ PBMCs (real-time RT-PCR, RNA sequencing)
- ✓ Microbiome
 - Blood (detection of microbial translocation - PCR)
 - Fecal samples (16S RNA sequencing)

LTO liquid biopsy working group - ELBS members

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