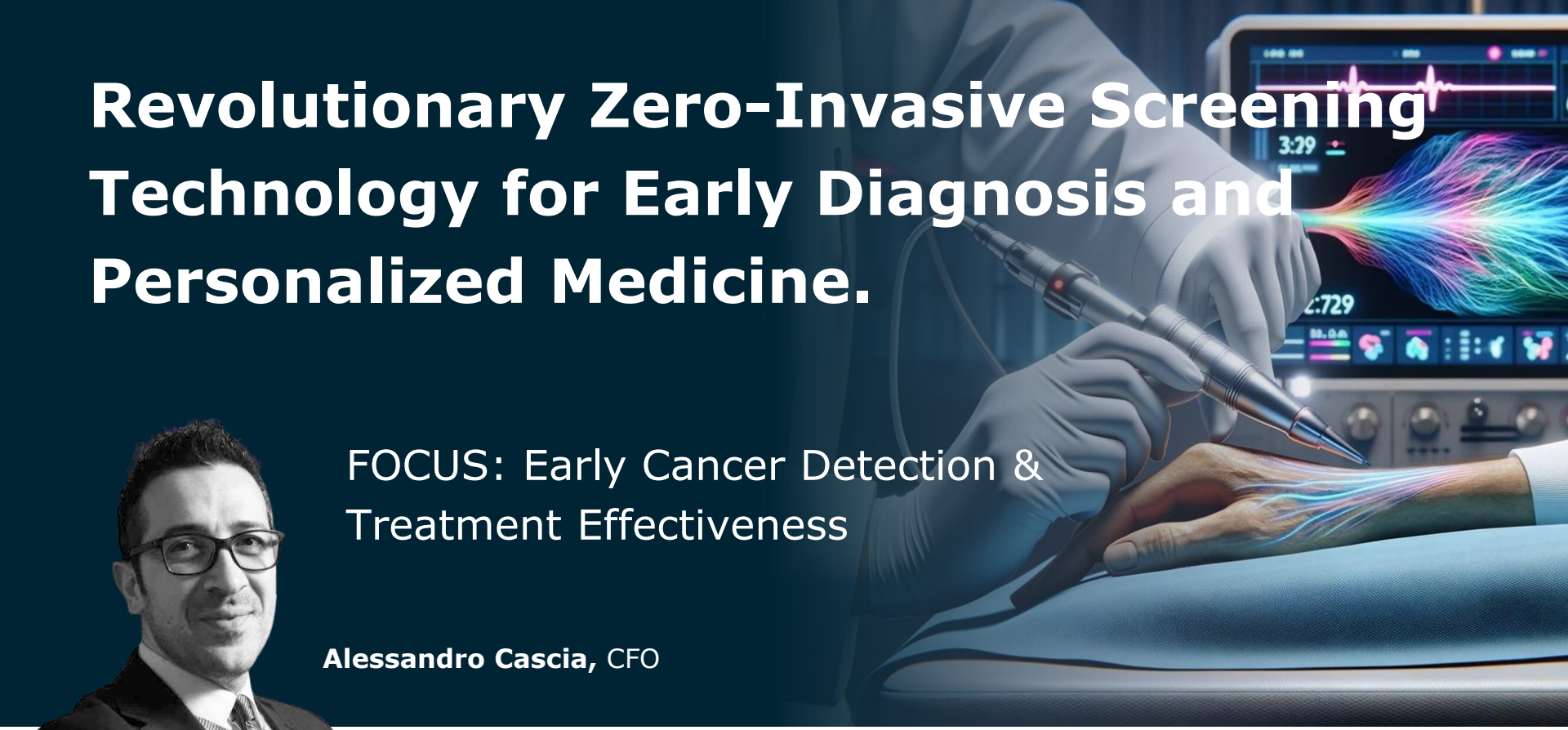
Revolutionary Zero-Invasive Screening Technology for Early Diagnosis and Personalized Medicine.



FOCUS: Early Cancer Detection & Treatment Effectiveness

Alessandro Cascia, CFO

mathbiology®

How does it works: detects weak body surface currents (nA) by a biosensor.

What it evaluates: Deep Metabolic Assessment (**DMA**). Screening of organs and brain regions. **Dysmetabolism** linked to diseases.

AI NATIVE

Transportable and easy to use: no special additional equipments needed.

Applicable to the **most impacting pathologies**.Specific focus on **Oncology** as the first target.

More than 20.000 set of data acquired and more than 1.000 people involved

mathbiology®

Certifications

- CE for Electromagnetic Compatibility: Certification completed.
- Medical Device Class 1: in progress. Planned for Dec 2024.
- EU Medical Device Class 2A planned from Q2 2025. FDA submission for the end of 2025.

mathbiology®

Intellectual Property

1. First patent submitted in May 2023
2. International Patent (PTC) submitted on May 2024
3. 3 trademarks registered
4. additional patents submission planned for 2025

Key-Characteristic in Oncology

	Blood-based Early Diagnosis	Early-Diagnosis All Tumors	Personalized and Optimized Therapy	Prediction of Treat. effect. side effects reduction
illumina GRAIL	✓	✗	✗	✗
huma health, discovered	✓	✗	✗	✗
ErleaDx	✓	✗	✗	✗
Freenome	✓	✗	✗	✗
GENETRON 泛生子 ANSWERS FOR CANCER	✓	✗	✓	✗
mathbiology®	✗	✓	✓	✓

Key-elements (Oncology)

	Founds Raised	Reliability	Test Cost (end-user)
illumina GRAIL	2 Billion US$	43%	950 US$
huma health, discovered	1 Million US$	xx%	nd
ErleaDx	nd	80%	nd
Freenome	1.4 Billion US$	colorectal cancer is reported at 79.2%	nd
GENETRON 泛生子 ANSWERS FOR CANCER	406 Million US$	nd	nd
mathbiology®	Raising in progress	>85% assessment still in progress	100 - 400 €

mathbiology®

DMA does not compete with other tools.
The Deep Metabolism Assessment (DMA) Technology COMPLEMENTS existing diagnostics, offering valuable insights to enhance and accelerate diagnosis while empowering treatments."

mathbiology®

Team Structure

now hiring: 3 biologists & 1 R&D assistant

Founders & Partners

significant experience #big-Pharma, #AI Market, #Univ. Professors #previous entrepreneurship success

Managers & Partners

#complementary competences #young researchers

Giuseppe Sgro
Biology & Clinical R&D Director – Former R&D Dir. Pfizer

Alessandro Cascia
CFO – Private Market Specialist Azimut

Raffaele Maccioni
Raffaele Maccioni
CEO & CTO – Pres. DSA (AI Ass.)

Emanuele Carpanzano
Scientific Advisors
Prof. Univ. SUPSI

keys-Researchers

Raffaele Cerulli
Scientific Advisors
Prof. Univ. Salerno

keys-Researchers

Gian Luigi Capurro
Sales & PR Executive

Maria Cristina Caracciolo
Legal & Corporate Affairs

Maddalena Mazzali
Communication & Marketing Manager

DR. Elvira Plenzich
AI Specialist PhD student –Univ. Salerno

DR. Roberto Tufano
AI Specialist PhD student –Univ.Salerno

mathbiology®

Below are outcomes from real cases.

It’s important to note that during a visit, hundreds of data points are collected and elaborated by the algorithms; here, we only present key parameters. These cases demonstrate the alignment between DMA Technology results and official physician diagnose.

Case: Breast Cancer

TABLE 1 - Point Measure correspondence: **Right breast**

Measure	value (nA)	MRI
Spontaneous Emission	290	
Response to Marker: Phosphoryl Ethanolamine	1330	**> 3**

TABLE 2 - Point Measure correspondence: **Left breast**

Measure	value (nA)	MRI
Spontaneous Emission	320	
Response to Marker: Phosphoryl Ethanolamine	540	< 1

Patient: 50-year-old woman.
Protocol: total body.

Algorithms calculate Marker Response Indexes (MRIs).
MRI >3 highlights positive dysmetabolism.

Phosphoryl ethanolamine is one of the markers used in the protocol. It is related to carcinoma as reported in the literature.

Table 1: MRI >3 identifies cell proliferation-related dysmetabolism in the right breast.

Biopsy needle aspiration confirms carcinoma in situ.

Table 2: Comparison with the left breast, where no abnormalities were detected.

Case: tumor diagnosis and counter-diagnosis

Following a series of magnetic resonance imaging scans, the patient receives an **initial diagnosis of a brain tumor** (left temporal and parietal cortex). Below the diagnosis report.

Roma [redacted]

Alla cortese attenzione del medico curante,

Viene dimesso in data odierna il Sig.ra [redacted], nata [redacted], ricoverata dal [redacted] dimessa in data odierna dal reparto di Neurologia.

DIAGNOSI: Lesione occupante spazio parenchimale temporo-polare sinistra in corso di definizion diagnostica. Emicrania comune. Componente monoclonale gamma IgG kappa.

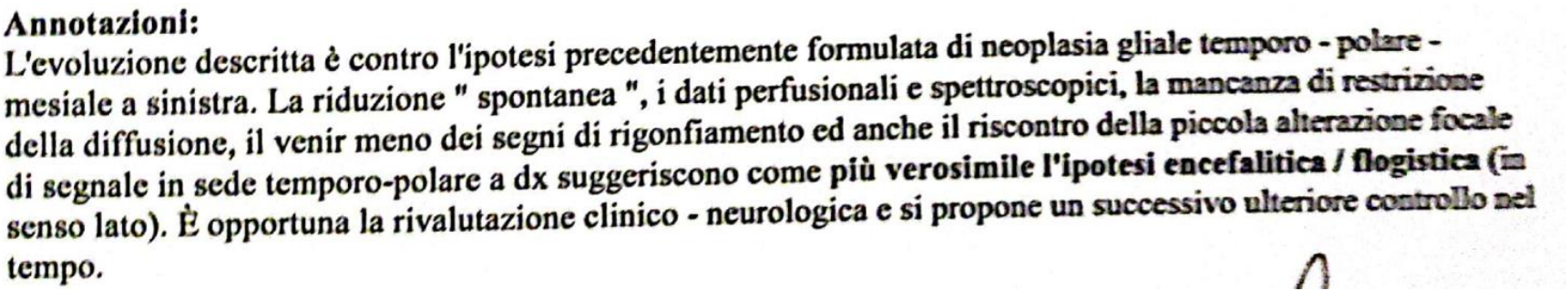
Case: tumor diagnosis and counter-diagnosis

The **DMA Test** (preceding the latest investigations) highlights, in the same areas reported in the initial diagnosis, an inflammation due to exogenous factors (IL-2 marker), associated with a cellular membrane repair process (PEtn), all with Marker Response Indexes >3), but it does not show proliferative processes associated with tumor formations (detectable with C-MYC, C-RAS, PChoCl markers).

	MRI C-MYC	MRI C-RAS	MRI PChoCl	MRI PEtn	MRI IL-2
Left Temporal Cortex	<2	<1	<2	**>4**	**>4**
Left Parietal Cortex	<3	<2	<2	**>3**	**3**
			Tumor		inflammation

Case: tumor diagnosis and counter-diagnosis

The **inflammatory hypothesis** is finally **confirmed** by further **diagnostic investigations**, ruling out brain surgery as illustrated by the following image showing the results of the latest cranial magnetic resonance imaging.



Annotazioni:
L'evoluzione descritta è contro l'ipotesi precedentemente formulata di neoplasia gliale temporo - polare - mesiale a sinistra. La riduzione " spontanea ", i dati perfusionali e spettroscopici, la mancanza di restrizione della diffusione, il venir meno dei segni di rigonfiamento ed anche il riscontro della piccola alterazione focale di segnale in sede temporo-polare a dx suggeriscono come più verosimile **l'ipotesi encefalitica / flogistica** (in senso lato). È opportuna la rivalutazione clinico - neurologica e si propone un successivo ulteriore controllo nel tempo.

Case: Brain Metastasis from lung Cancer

Patient: Man 71 years old.
Protocol: Oncology Total Body

Right lung adenocarcinoma was diagnosed in 2014. First-line chemotherapy. Second-line chemotherapy from 2017 to 2022.

In april 2024, a metastasis was discovered in the cerebellum and in other brain districts.

Algorithms calculate **Marker Response Indexes** (MRIs). **MRI >3 highlights positive dysmetabolism.**

Marker	MRI	District	Remarks
PChoCl	>3	Cerebellum and brainstem	This marker is related to an increase in the production of cellular membranes typical of ongoing tumor processes
Glucose	>5	epiphysis (pineal gland)	This marker is related to an increase of cellular metabolism. Commonly used (in radioactive form) in PET (Positron Emission Tomography)
C-RAS PEtn Glucose	>4 >4 >7	corpus callosum	The "moved" markers indicate at the same time a genetic mutation typical of cancer cells, an intense replication activity of cell and nuclear membranes (phospholipids) and an intense metabolic activity. These are all characteristics that tumor activity has in common
glucose	>4	liver	This marker is related to an increase of cellular metabolism. When it is the only marker detected, it is not necessarily linked to tumor but to cellular activity. Ultrasound of the liver shows a cyst
Glucose & PEtn	>3	midollo spinale e gangli paravertebrali	Those markers indicate an intense replication activity of cell and nuclear membranes (phospholipids) and an intense metabolic activity.
PChoCl Glucose	>3 >4	Stomac	Those markers indicate an intense replication activity of cell and nuclear membranes (phospholipids) and an intense metabolic activity.
C-RAS PEtn Glucose	>3 >3 >4	basal nuclei and thalamus	The "moved" markers indicate at the same time a genetic mutation typical of cancer cells, an intense replication activity of cell and nuclear membranes (phospholipids) and an intense metabolic activity. These are all characteristics that tumor activity has in common
	all <3	Frontal cortex, Kidneys, bladder	By way of example, the negative response of the same markers on uncompromised organs, in line with traditional examinations such as MRI and CT scans on the same patient.

Case: Alzheimer

Point Measure correspondence: **basal nuclei**		
Measure	**value (nA)**	**MRI**
Spontaneous Emission	70	
Response to Amyloid beta	370	>4
Response to Caspase 7	370	>4
Response to Ig-A	340	> 3
Response to Ig-G	340	>3
Response to Malondialdehyde (MDA)	330	>3

Patient: Man 80 years old.
Protocol: healthy mind

Algorithms calculate **Marker Response Indexes** (MRIs). **MRI >3 highlights positive dysmetabolism.**

The spontaneous emission is significantly below the standard of people of the same gender and age. This already constitutes a preliminary clue.

The markers used in this protocol are those reported in the literature, as expressed in the case of Alzheimer.

All the markers show an MRI>3, **coherently with the diagnosis of Alzheimer's by usual clinical assessment.**

Dual-Channel Business & Revenue Model

#Technology as a Service #Rapid Scale-up #Brand Value #Targets EU, US, Canada, UAE

mathbiology®

DIRECT

1) Direct Human Biology Institutes (HBI)

Biologists offering direct screening services to end-users and assisting attending physicians

Revenue from Technology as a service & Visits.

el - Key Objectives

1. Establish the format and customer experience model
2. Validate and showcase the solution's potential
3. Aim to contribute approximately **10%** of total revenue

B2B2C

2) B2B2C + HBI Franchising

Third Parties: Clinics, pharmacies, biologists, and physicians adopting the technology. Partners may also become HBI Franchise Points for added benefits

Revenue from Technology as a Service (TaaS).

B2B Channel - Key Objectives

- Scaling.
- Aim to contribute approximately **90%** of tota revenue

Market Opportunity
One Of The Pillars

mathbiology®

396k

ITALY 2023
New Cases of Cancers

1.9M

USA 2023
New Cases of Cancers

20M

WORLD 2023
New Cases of Cancers

2023,global spending on oncology, US$218 Billion

TAM: US$38 Billion
SAM: US$20 Billion
SOM: US$1 Billion

Key Achievements and Highlights

Granted Project PREVEDO (won in 2023, started in 2024)
We received a grant from the Ministry of Business and Made in Italy (MIMIT) for a 30-months R&D project in Oncology and Cardiology. The project, with a budget of €700K, involves Math Biology and the Departments of Medicine, Chemistry & Biology, and Mathematics at the University of Salerno.

Smart & Start Success (2024)
We passed the Smart&Start selection by Invitalia, securing a €600K interest-free loan (10 yrs) and a €220K grant, backed by the Italian Ministry of Economy, to boost our development.

Healthcare Startup Battle (March 2024)
Math Biology won top honors in a competition by Paideia Hospital International, a leading Rome-based clinic investing in life science startups, underscoring our excellence in the healthcare startup ecosystem.

Innovit Selection (May 2024)
Math Biology is one of 15 startups chosen for the Innovit acceleration program, backed by the Italian Trade Agency and the Consulate General of Italy in San Francisco. This program will connect us to Silicon Valley's innovation and venture capital scene, with a two-week trip to San Francisco.

mathbiology®

Initial Funding & Future Opportunities

What are we looking for:

1° Round **1.5 M$**

Nominal Valuation post-money: 9.5M€

800k$ already committed.

We are looking for financial and industrial key-partners (pharma, diagnostic tech vendors, insurances..)

Following our launch in Italy, we see the USA as the ideal base for scaling up.

NEXT Round planned for the 2025. Potential target 30 M$, evaluation 70 M$

mathbiology®

Thank You

www.mathbiology.tech

alessandro.cascia@mathbiology.tech
+39 339 2757 936