MetaXplore™
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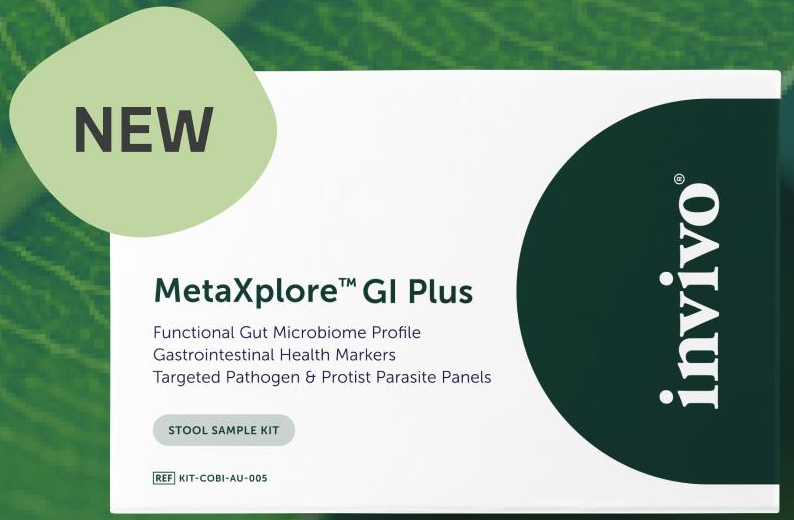
Webinar

Introducing MetaXplore – The *future* of **GI testing**.

Revolutionise gut health with MetaXplore.



Welcome

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Hannah Braye, MSc, LLB (Hons)
Registered Nutritionist (BANT)
Clinical Director at Invivo Healthcare

All participants have been muted

There is time for a questions at the end.

Add your questions in the Q & A to have them answered

Webinar Overview

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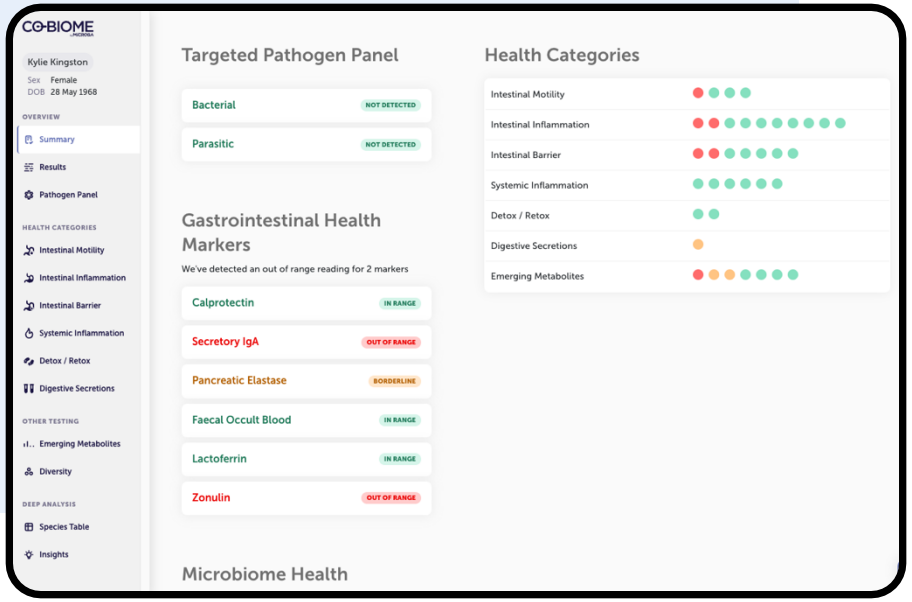
- Introducing Microba & MetaXplore GI Plus
- The Evolution of Gut Microbiome Testing
- The Science Behind MetaXplore
- MetaXplore Highlights
- Interactive Live Report Demo
- Q & A



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Introducing Microba & MetaXplore

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Whole Microbiome Test by Microba

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The Human **Microbiome Company**

Supporting human health and ecology is our mission.

We are a B Corp certified organisation, offering microbiome testing, along with a range of carefully and sustainably sourced supplements to target the microbiome.

MICROBA™

We are part of a **wider community**

Recently we became part of Microba Life Sciences.

Microba is a precision microbiome organisation driven to improve human health and are world-leading in their technologies for measuring the human microbiome.

Find out more about Microba at https://microba.com

Microba's founders are globally recognised microbiome experts

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Recognised among the **world's** most influential researchers of the past decade in their fields

Published the **first paper** to use metagenomics for profiling microbial communities

Led the development and application of metagenomics and industry standard tools for analysis

Redefined the standards for the systematic classification of microbial taxonomy

Berkeley UNIVERSITY OF CALIFORNIA

The University Of Queensland AUSTRALIA

Massachusetts Institute of Technology

Prof Gene Tyson
Co-Founder

Prof Phil Hugenholtz
Co-Founder

JGI JOINT GENOME INSTITUTE

The University Of Queensland AUSTRALIA

Berkeley UNIVERSITY OF CALIFORNIA

Introducing MetaXplore GI Plus

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Gastrointestinal Health & Whole Microbiome Analysis

Widest Marker Coverage

- ✓ Over 28,000 microbial species
- ✓ 20 microbial functional markers
- ✓ Microbial diversity score
- ✓ 18 PCR pathogen targets
- ✓ 7 gastrointestinal (GI) markers

Rigorous Science

- ✓ Metagenomics next-gen sequencing (mNGS)
- ✓ Proprietary sample preservation for reliability
- ✓ World-class lab and bioinformatics pipeline
- ✓ Evidence-based insights from over 1,200 peer-reviewed papers, graded by quality

Clinician-Friendly Reporting

- ✓ Traffic-light reporting to help easily identify out of range results
- ✓ 80+ diet, lifestyle and supplement insights tailored to each client
- ✓ Interactive, online report that can be easily shared with the client and their broader care team

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Whole Microbiome Test by Microba

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The Evolution of Microbiome Testing

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History of Microbiome Testing

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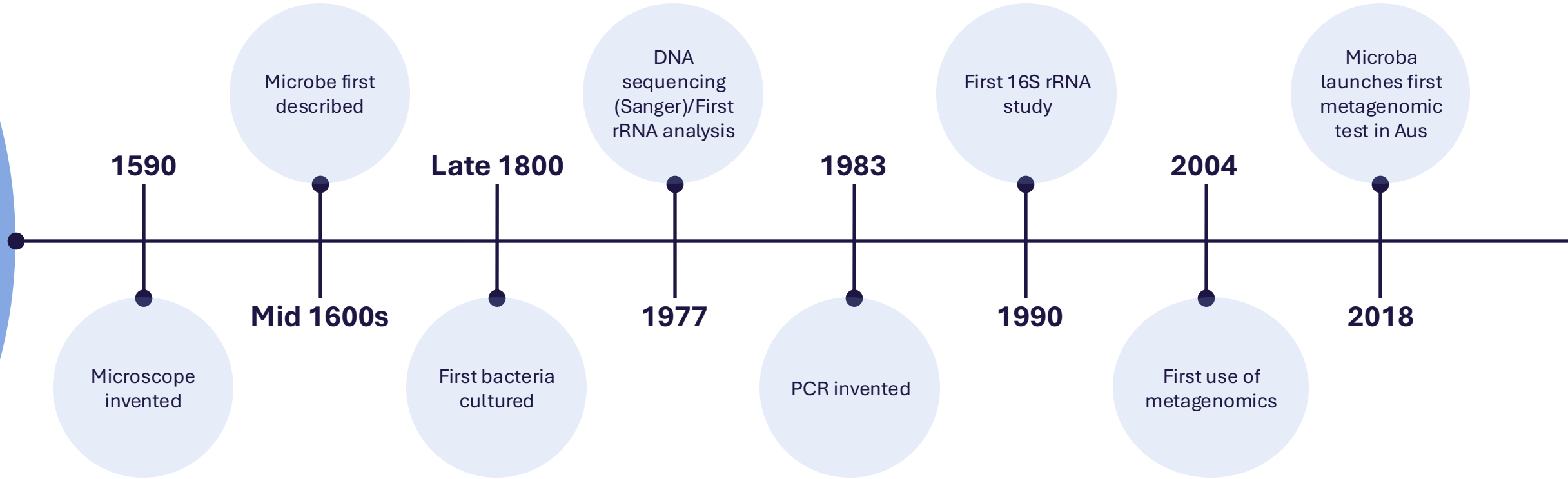

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Culture-based methods

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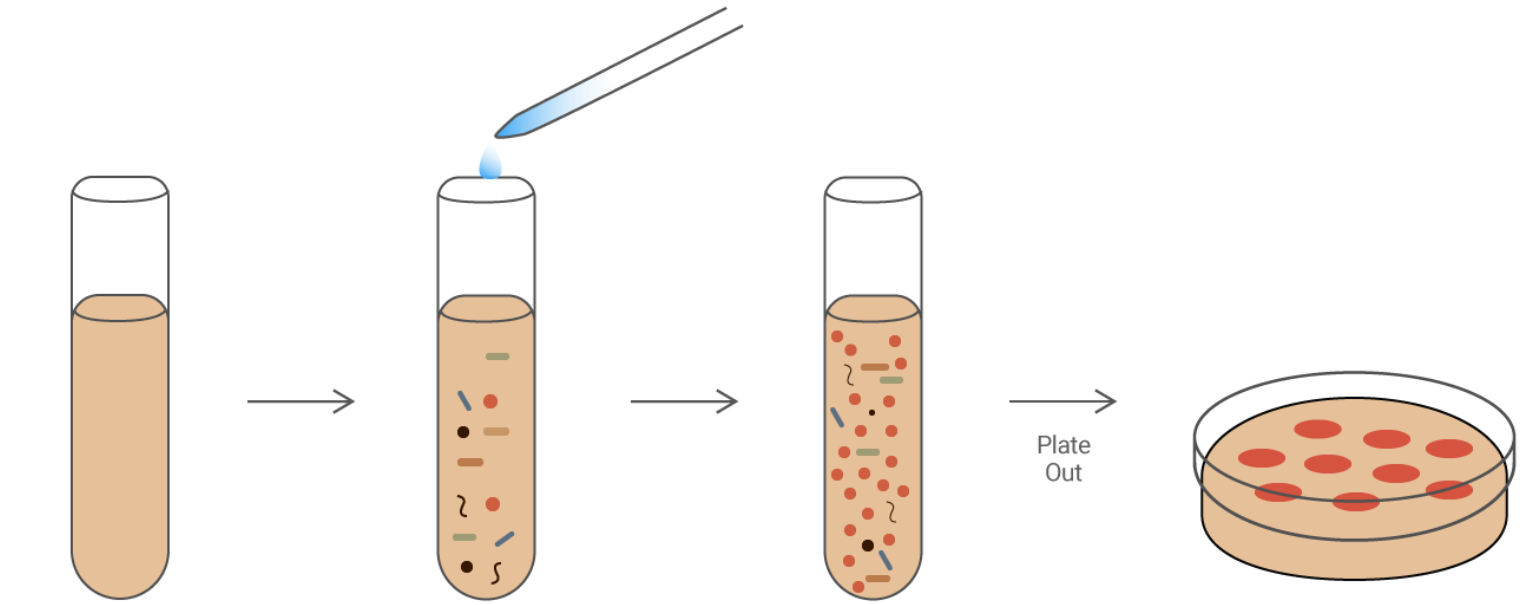

Sensitive, but provides very limited coverage of gut microbiome

Quantitative PCR (qPCR)

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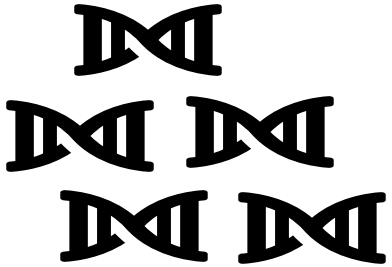
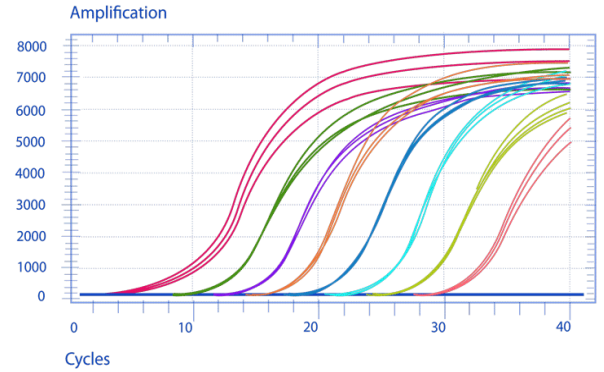
Target DNA segment for species/genus ID



Amplification of target DNA in sample



Identification of target species

Very sensitive, but you need to know who you are looking for

16S rRNA gene sequencing

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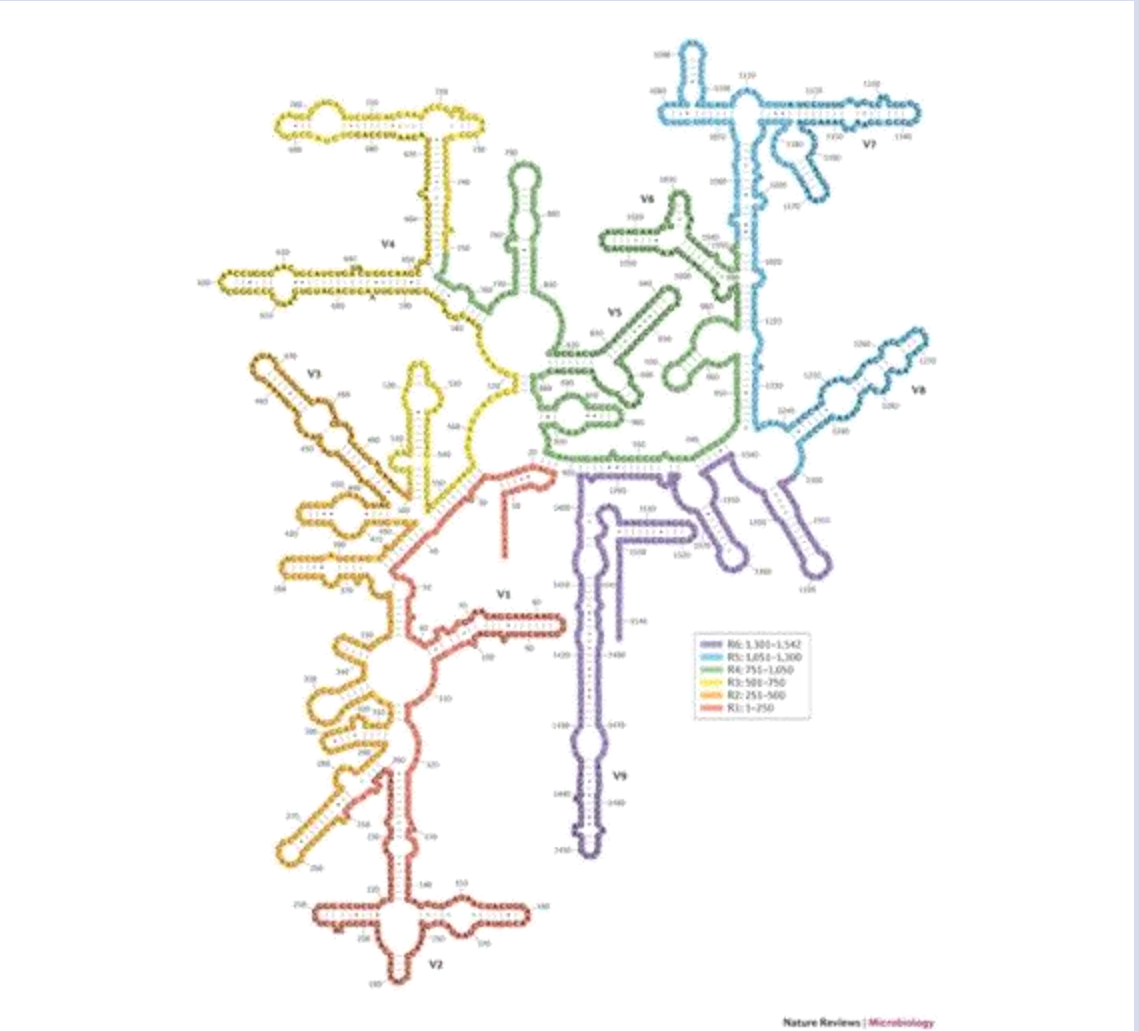
- Targets and amplifies small portion of 16S ribosomal gene – present in all bacteria
- Accurate identification restricted to genus-level only
- Cannot identify fungi or protists
- Can only identify known bacteria. Unable to discover new species
- No functional information

Inexpensive, but lacks taxonomic resolution and functional insight



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Metagenomic sequencing

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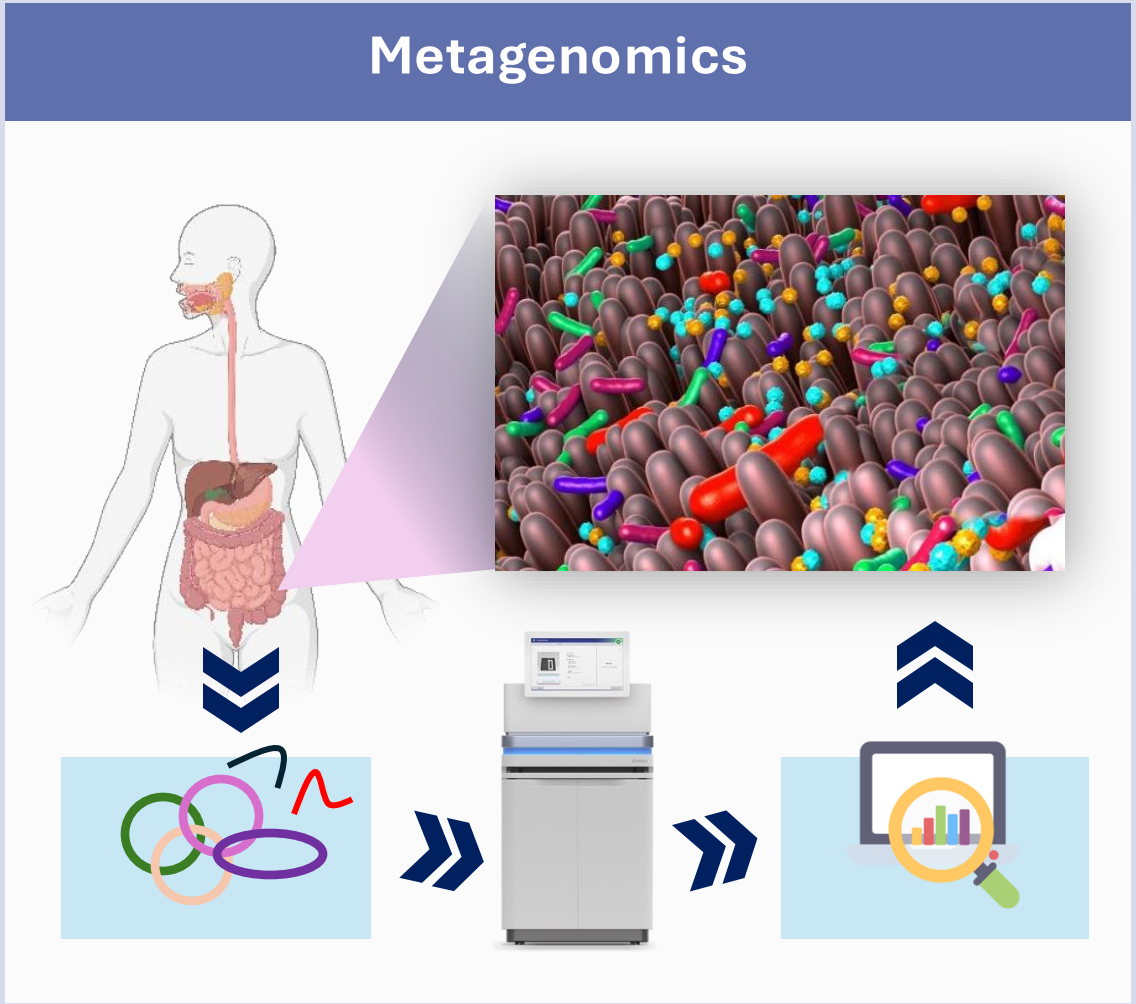
Metagenomics is the analysis of DNA isolated from **all microorganisms** in a sample.

It allows the study of the **composition** (who is present) and **function** (what are the microbes doing) of entire microbial communities.



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High-resolution metagenomics is needed for resolving clinically relevant signals

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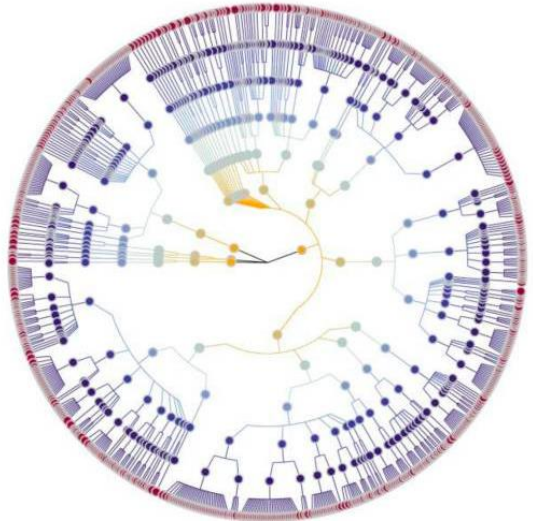
Metagenomics can provide:

- Comprehensive **species-level** identification
- Identification of **new/previously unknown** species
- Presence of microbial **functional genes/pathways**

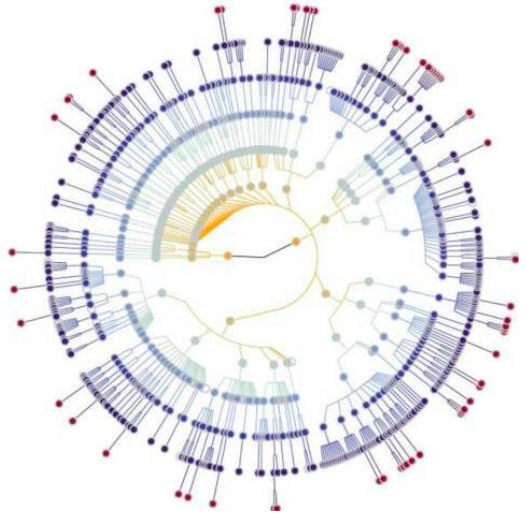
Metagenomics: 632 species



A: Taxonomic profile of gut microbiome with shotgun metagenomics

Zhernakova *et al*. ***Science***. (2016)

16S: 57 species



B: Taxonomic profile of gut microbiome with 16S amplicon sequencing (V4 region)

Why do we need information on functional pathways?

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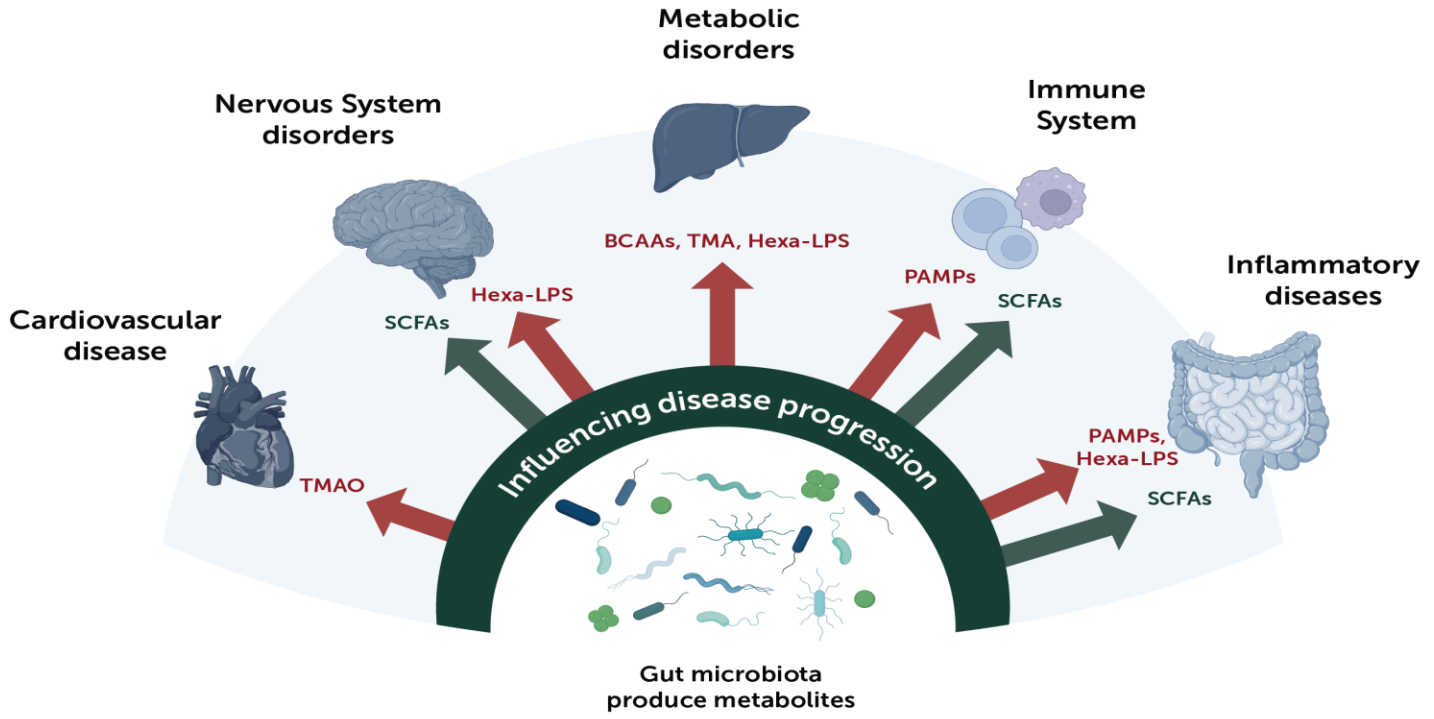
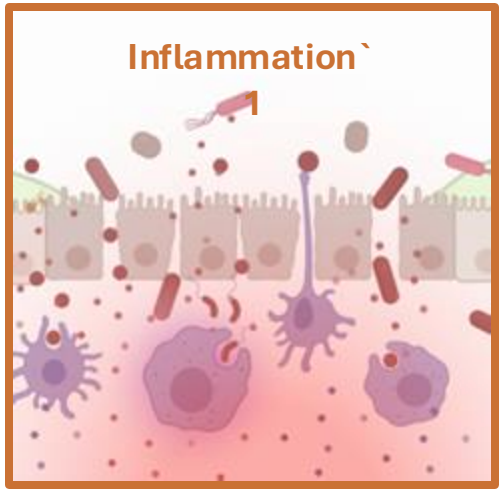


- Dsybiosis can relate to diversity, composition or **functional changes** to the microbiome
- Microbial proteins and metabolites interact with human cellular receptors **impacting host health**
- Opportunity for **intervention**

Example: Functional information can be used to inform the microbiome contribution to inflammation

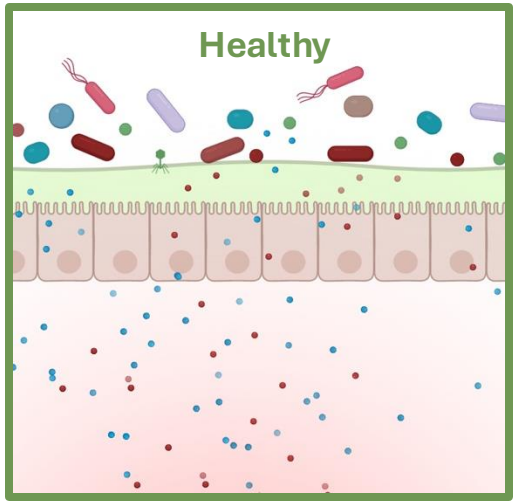
Pro-inflammatory

- Hexa-acylated lipopolysaccharides (LPS)
- Trimethylamine (TMA)
- Excess branched chain amino acids (BCAAs)
- Mucin degradation



Anti-inflammatory

- Butyrate
- Indolepropionic acid (IPA)



Summary of methods used to measure the gut microbiome

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	Culture	PCR	16s rRNA gene sequencing	Metagenomic sequencing
High Sensitivity	✓	✓	✓	✓
Full Coverage of Bacteria			✓	✓
Full coverage of All Microbes				✓
Species Level ID	(✓)	(✓)	(✓)	✓
Functional Pathways				✓

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MetaXplore™ GI Plus

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	Testing Method	Capabilities
Commensals	Metagenomics	Identifies microbes to the species level Assessment of up to 28,000 different species
Pathobiont	Metagenomics	Identifies microbes to the species level Assessment of up to 28,000 different species
Pathogen	PCR	NATA accredited pathogen detection Highly sensitive detection 13 bacterial and 5 protist parasite targets
Functional	Metagenomics	Complete picture of whole microbiome Assessment of 20 different functional markers

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Whole Microbiome Test by Microba

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The Science Behind MetaXplore

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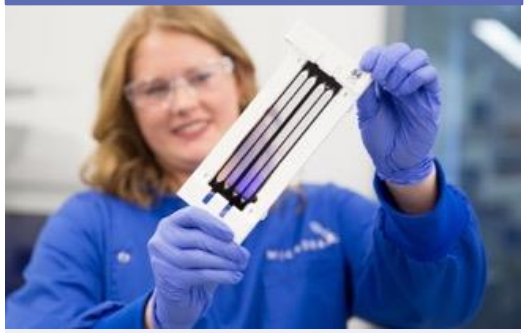
Microba's Precision Analysis

Sample Preservation

Patented sample preservation method for providing accurate and reproducible results

Validated Laboratory Process



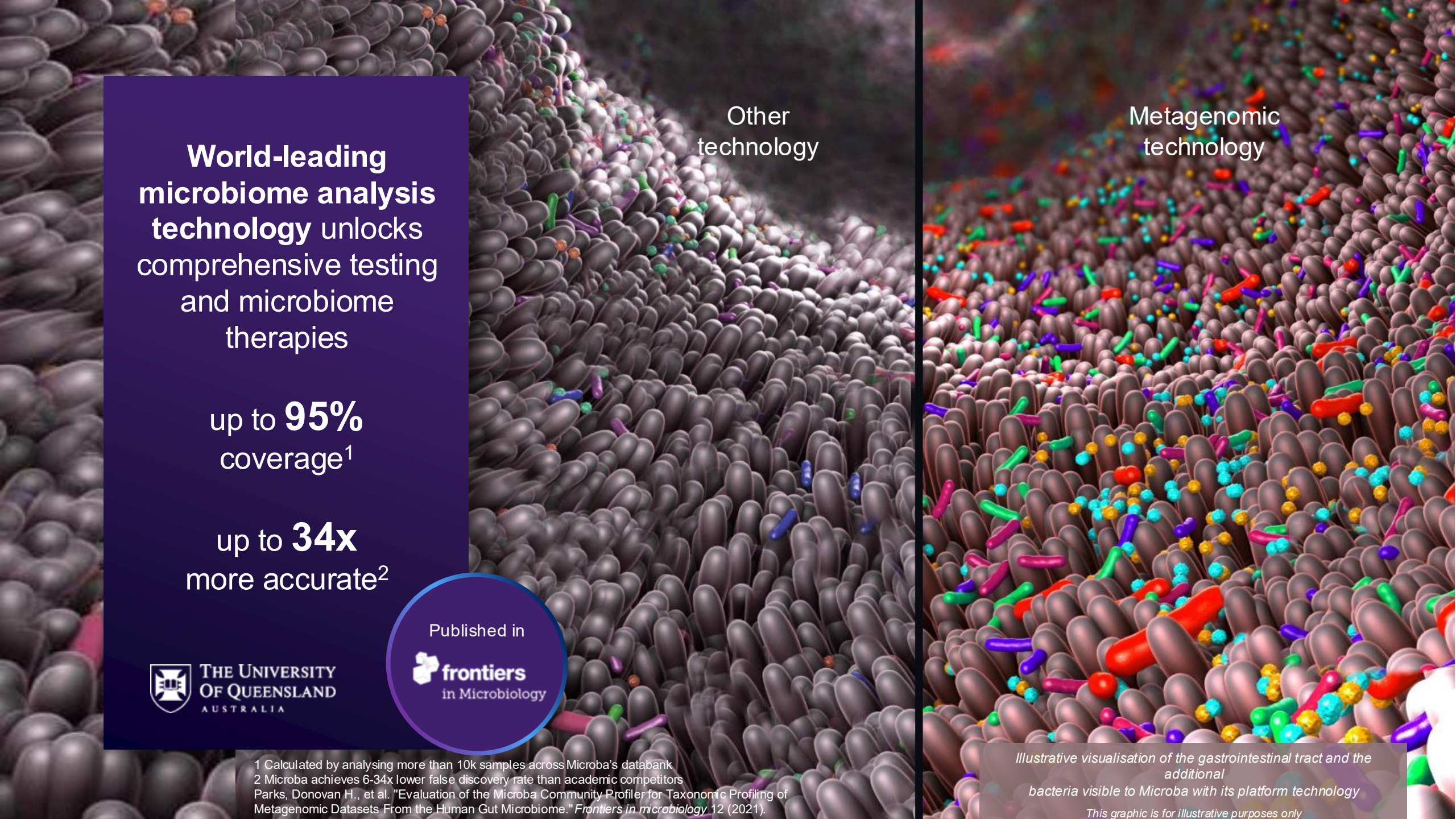
Operating to **Medical Laboratory ISO 15189 Standards**, with a highly automated workflow

World Leading Bioinformatics Platform

High-resolution profiling technology Operating to ISO15189

Evidence-Based Clinical Analysis

Scientific, analytical, clinical expertise delivering high quality services to clients



World-leading microbiome analysis technology unlocks comprehensive testing and microbiome therapies

up to **95%** coverage[1]

up to **34x** more accurate[2]

Published in frontiers in Microbiology

THE UNIVERSITY OF QUEENSLAND AUSTRALIA

1 Calculated by analysing more than 10k samples across Microba's databank
2 Microba achieves 6-34x lower false discovery rate than academic competitors
Parks, Donovan H., et al. "Evaluation of the Microba Community Profiler for Taxonomic Profiling of Metagenomic Datasets From the Human Gut Microbiome." *Frontiers in microbiology* 12 (2021).

Illustrative visualisation of the gastrointestinal tract and the additional bacteria visible to Microba with its platform technology

This graphic is for illustrative purposes only

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MetaXplore Highlights

MetaXplore's Whole Microbiome Analysis

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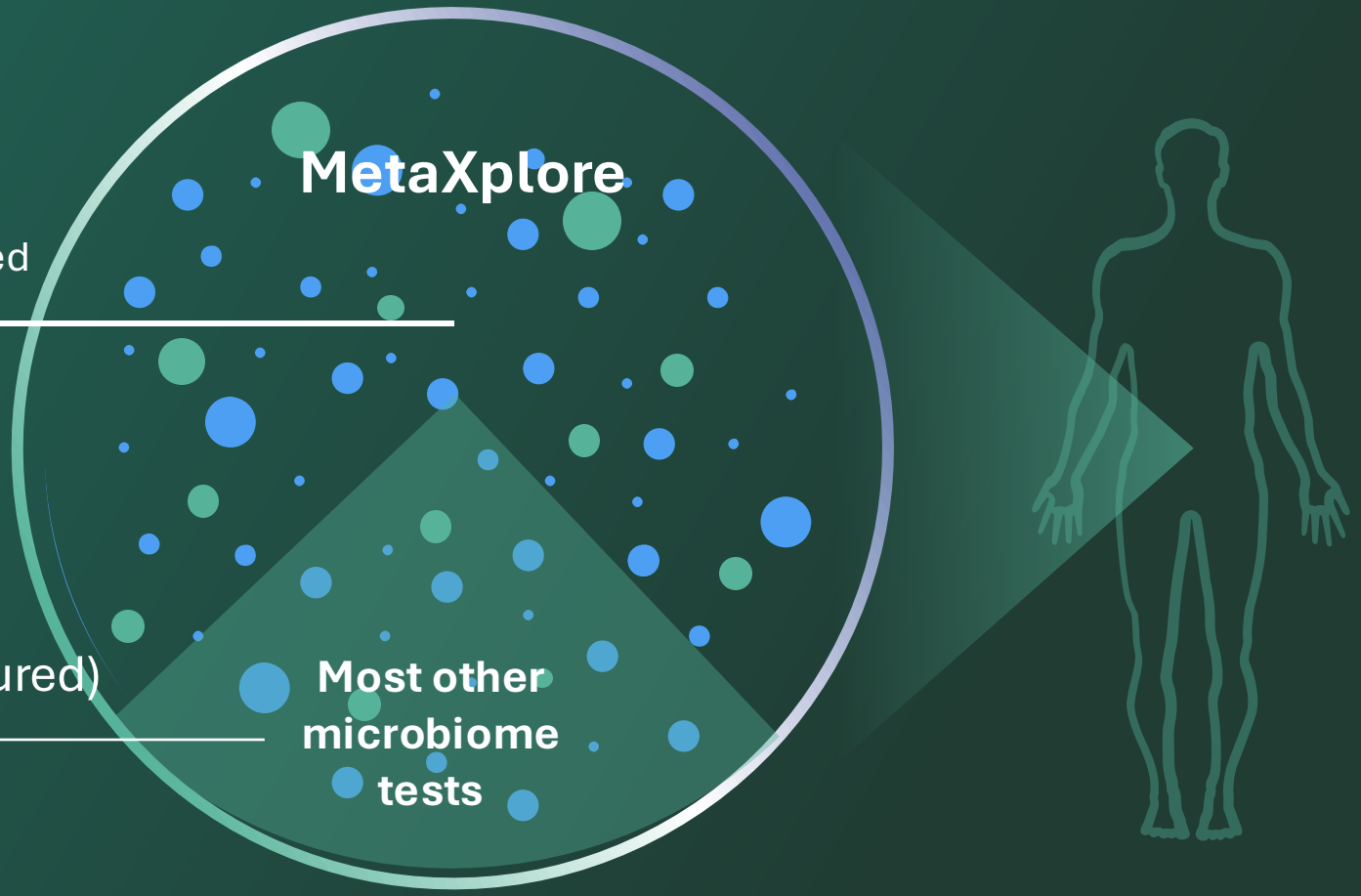
63%
Uncharacterised

37%
Known (cultured)



Can identify over **28,000 microbial species,** including:

- **2,953 fungal** species
- ~240 **archaeal** species
- **425 protist** species
- **410 oral** species

- Pribyl et al 2024, *Nature Microbiology, In Press*

MetaXplore GI Plus Highlights

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7 **Gastrointestinal Health Markers** provide assessment of gut function and health

PCR highly sensitive detection of **13 bacterial pathogen** and **5 protist parasite** targets

Microbiome **Diversity & Richness** Analysis

Microbial Functional Markers analysed in relation to cohort of 484 exceptionally healthy individuals.

Deep dive Species **Explorer,** filterable by **health & disease associations**

Evaluation of microbiome and GI health effects on 6 different **health categories**

>80 scientifically graded **clinical & research insights** for diet, lifestyle and supplement interventions

Interactive sharable report, with built in interpretation support

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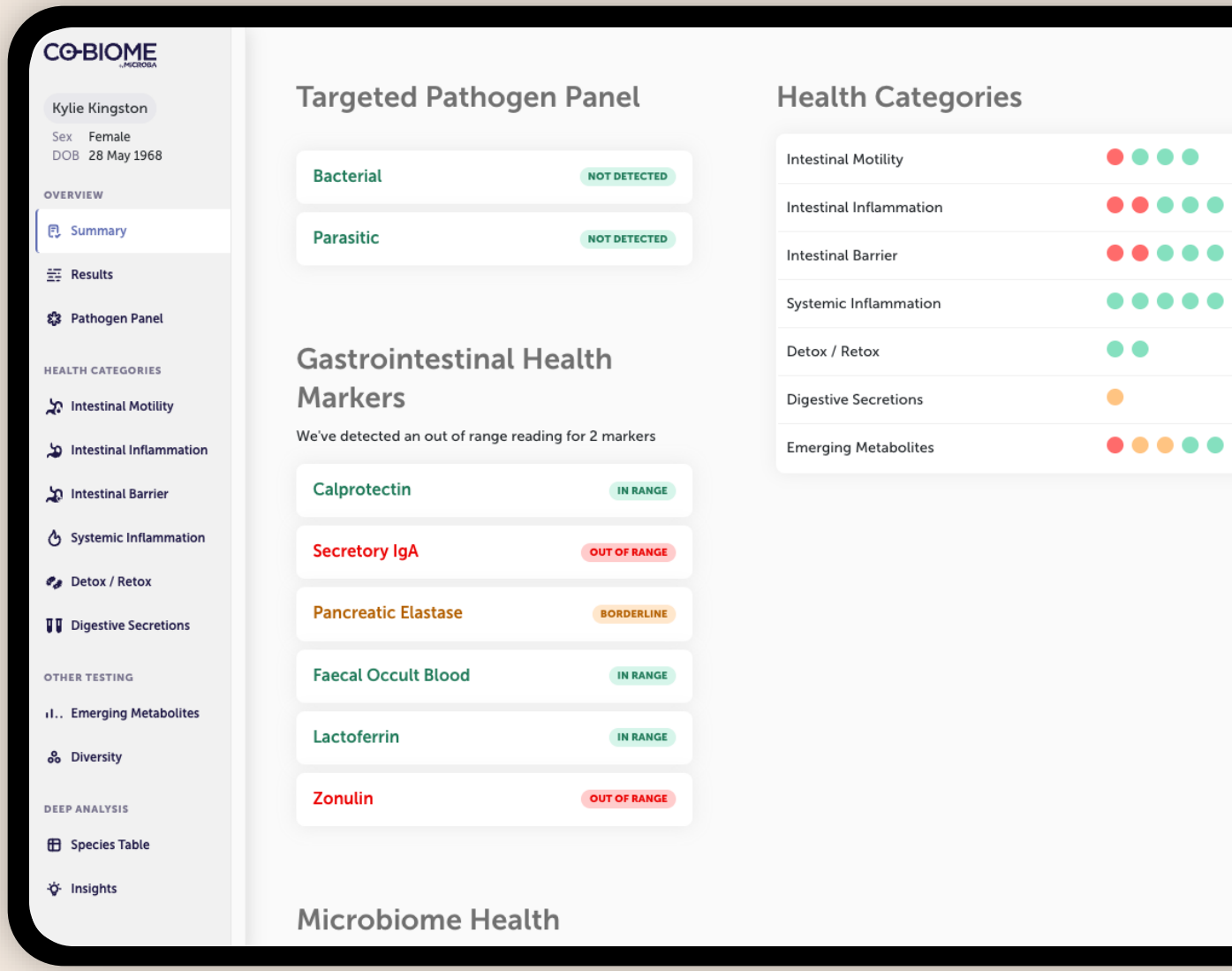
Live Demonstration



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Interpretation Support

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MetaXplore™ Range Report Interpretation Checklist

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① ASSESS	Red flags (refer to a medical specialist, if necessary)	Faecal occult blood detected*	☐	
		Calprotectin above 100 µg/g*	☐	
		Lactoferrin above 7.2 µg/g*	☐	
		Pancreatic elastase below 100 µg/mL*	☐	
		Pathogens detected on diagnostic targeted pathogen panel**	☐	
		Potential pathogens identified in metagenomic species table (search pathogen)	☐	
	Gut terrain	Faecal pH*	☐	
		Secretory IgA*	☐	
		Zonulin*	☐	
		Mucin degradation	☐	
		Oral species	☐	
	Dysbiosis	Diversity and richness (species count)	☐	
		Microbial markers out of range - acetate, *B. fragilis* toxin, branched-chain amino acids (BCAA), beta-glucuronidase, butyrate, hexa-acylated lipopolysaccharide (hexa-LPS), hydrogen sulphide, 3-indolepropionic acid (IPA), methane, oxalate, propionate, trimethylamine (TMA)	☐	
		Species table for more advanced users - to learn more visit Co-Education	☐	
② APPLY	Findings & insights	Based on client symptoms, bowel habits, health history, allergies, intolerances, tolerability, goals, motivations	☐	
		Prioritise insights based on the markers that need addressing the most (via results range or via health categories)	☐	
		If there are no markers out of range, work on healthy microbiome foundations to help the client improve their microbiome potential	☐	
		Request further pathology or investigative testing, if necessary	☐	
③ ADAPT	Treatment based on client response & re-test results	Regular client check-ins to monitor progress, compliance and treatment tolerability	☐	
		Re-test between 3-6 months to assess treatment success	☐	
		Maintain microbiome health	☐	

*Available in MetaXplore GI & GI Plus only **Available in MetaXplore GI Plus only

The faecal pH assay used in the MetaXplore™ range is for research use only and not to be used as a basis for diagnosis. The metagenomic assays used in the MetaXplore™ range are to determine the microbiome populations and associated functional pathways in a faecal sample. The application is for research use only and not to be used as a basis for diagnosis.

Contact the Clinical Support Team: support@invivohealthcare.com

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MetaXplore Education Portal

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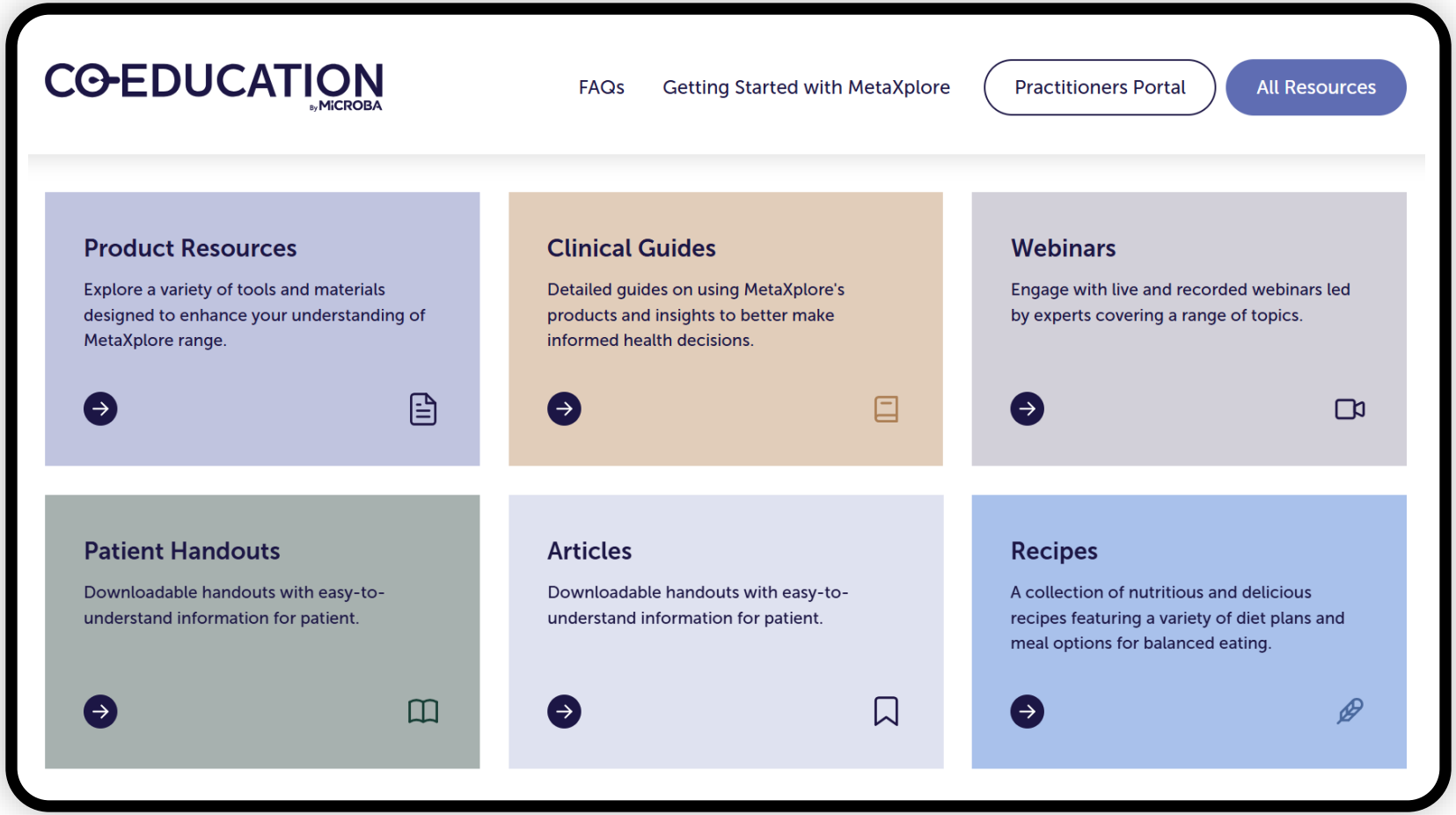

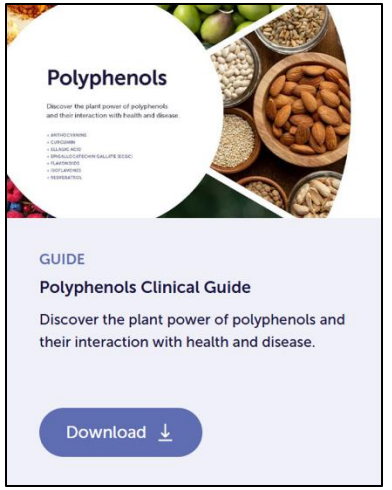

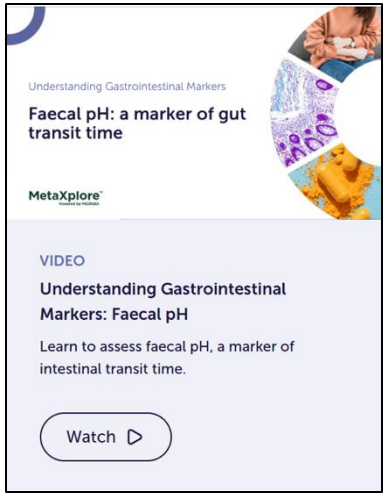

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Client handouts and recipes

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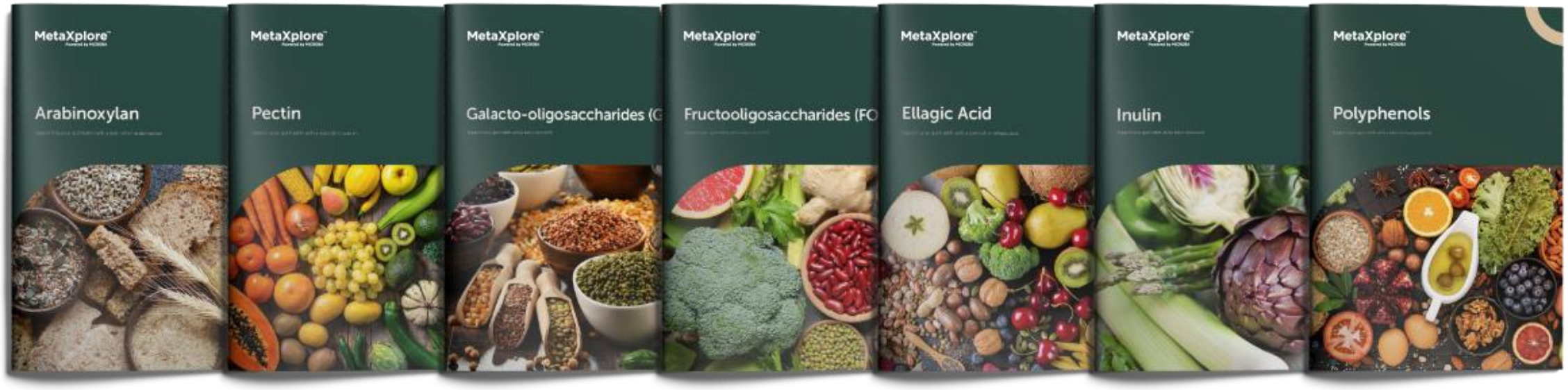

New **Recipe**

Raspberry Chia Overnight Oats

Promote 3-indolepropionic acid (IPA) production with this recipe rich in ellagic acid.

New **Recipe**

Chestnut Hummus Dip

Promote 3-indolepropionic acid (IPA) production with this recipe rich in ellagic acid.

New **Recipe**

Roast Sweet Potato, Pomegranate and Pecan Salad

Promote 3-indolepropionic acid (IPA) production with this recipe rich in ellagic acid.

New **Recipe**

Broccoli and Apple Salad

Promote production of butyrate and reduce production of hydrogen sulphide with this recipe rich in fructooligosaccharides (FOS).

New **Recipe**

Watermelon Slushie

Promote production of butyrate and reduce production of hydrogen sulphide with this recipe rich in fructooligosaccharides (FOS).

New **Recipe**

Pear and Apple Crumble

Promote production of acetate and butyrate with this recipe rich in pectin.

What healthcare professionals are saying about MetaXplore

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"As a Functional Medicine practitioner, I always seek the most advanced and reliable tools to support my clients' health journeys. The MetaXplore stool test is ***next level gut testing*** *and has been a* ***game-changer in my practice****, providing deep insights into gut health, microbiome balance, and digestive function. This test offers* ***invaluable data with supporting science*** *to help me create* ***targeted, effective protocols*** *for my clients."*

Gemma McGuigan, Naturopath, UK

"Using the MetaXplore test in my practice provides in-depth information ***not available in other stool tests*** *on the market. Clients are intrigued to see their entire gut microbiome mapped and as a practitioner the presentation of the findings is* ***easy to follow*** *and is enhanced with up-to-date researched protocols."*

Caroline Peyton, Nutritional Therapist, UK

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What’s included?

Instruction booklet

Checklist

Collection paper

Ice brick

Swab

Pot

Blue-capped tube

Day of collection stickers

Pouch A

Pouch B

Kit box

Reply-paid envelope

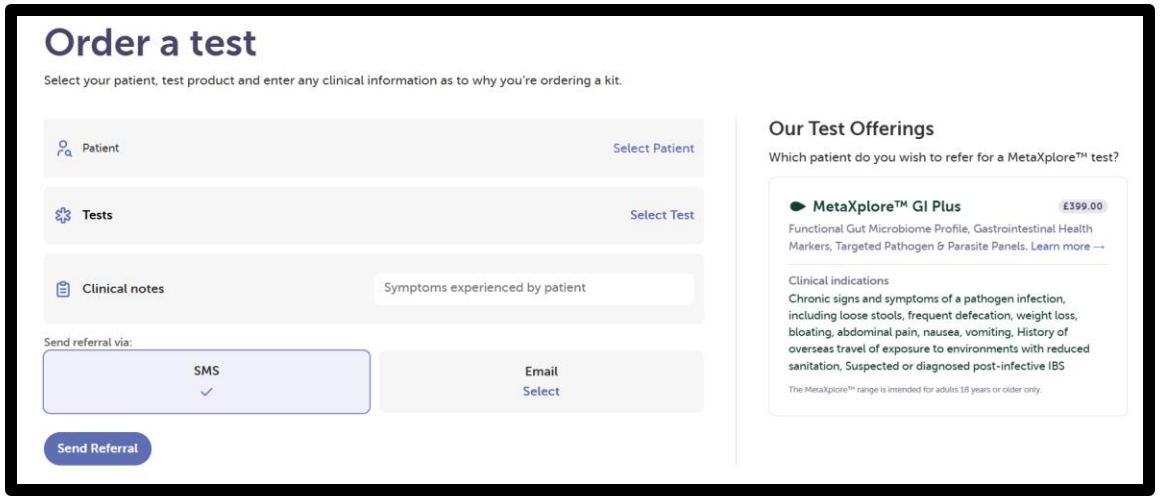
Thermal pouch

Referring a Test

- ✓ Tests are referred via your dedicated Practitioner Portal
- ✓ Email & SMS text message referral options available
- ✓ Clients based in UK mainland
- ✓ Price £399
- ✓ Pay in 3 available to clients via PayPal

Returning a Sample

- ✓ Samples returned by post within 24 hours
- ✓ Samples to be posted Mondays-Wednesdays
- ✓ Royal Main collection from home is available
- ✓ Temperature controlled packaging
- ✓ Cost of postage included
- ✓ 3-4 weeks report turnaround



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Summary

What you get with MetaXplore GI Plus

1.

A comprehensive test for assessing gut health

MetaXplore™ GI Plus for £399

- ✓ **Pathogen Panel**
- ✓ **GI Health Markers**
- ✓ **Whole Microbiome Profile**
- ✓ **Functional Microbiome Analysis**

2.

A report designed for informed clinical decision making

- ✓ Get key findings in an easy-to-interpret report with an **Expert Summary**
- ✓ Get answers on red flags, intestinal barrier function, motility, inflammation and other **health categories**
- ✓ An interactive, web-based report, **easily shareable** with your clients and wider care team

3.

Clinical support to help you improve your client outcomes

✓ Onboarding & Clinical Support

- Ongoing onboarding support
- 1:1 clinical report interpretation calls
- Support with client management protocols

✓ Clinical Resources

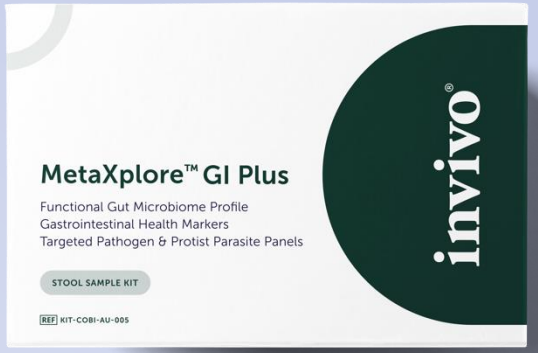
- Report interpretation checklist
- Report interpretation guide
- Client handouts and recipes for diet, lifestyle and supplementation

✓ Ongoing Education & Community

- Clinical application mentoring program
- Clinical webinars with peer-led case-studies
- Mentoring program alumni meetups

Get started today

Register now & get **20% off**
your first 5 MetaXplore tests



Join the waitlist: www.invivohealthcare.com/metaxplore-waitlist/

Discounted tests must be ordered within 60 days of joining

Clinical Growth Team

Jo Matyear
SW England
& Wales

Rob Haines
Central England

Nicole Burska
London

Bethany Horne
North England &
Scotland

Jane Mostowfi
SE England

Contact the Clinical Growth Team: info@invivohealthcare.com

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Thank you for listening
- Any Questions?