

Commercializing next-gen microbiome technologies



Our journey (so far)

FUTURE OF THE MICROBIOME
NOVEMBER 2022
ADVANCED BIOTICS BV, WAGENINGEN

The
microbiome
positive
food & drink
company

A game of two halves

Presentation

*Formal presentation of our company:
as a case study of commercializing next-gen
microbiome ingredients.*

Fireside / Q&A

*Deeper dive into strategy, validation work,
lessons learned, and much more.*

WE ARE ON A MISSION TO CREATE MARKET-LEADING MICROBIOME POSITIVE FOODS AND DRINKS THROUGH THE COMBINATION OF NEXT-GEN PREBIOTIC AND POSTBIOTIC TECHNOLOGIES

Key facts:

- Company formed late 2021
- Launched online sales into UK market July 2022
- Launched practitioner sales November 2022
- Award winning product
- New variations and products coming 2023
- Exclusivity deals already in place with key suppliers

AN AWARD WINNING PRODUCT



GUT FRIENDLY
& FERMENTED



SPORTS
NUTRITION



HIGH PROTEIN
& COLLAGEN

Agenda

Our Story 01

Market Approach 02


Innovation & NPD Strategy 03


Branding & Communication 04

#MicrobiomePositive

01. Our Story








NATHAN GRAY
Co-Founder

Nutrition industry veteran. Former consultant and \$2B editor. 10+ years in the microbiome space. Managed multi-million portfolios and consulted for some of the biggest companies in the microbiome space.


Roles:
Science & Technical Director
Global Probiotic Association
Founder
Nutraceutical Consultancy
Senior Editor
Microingredients, FoodNavigator & Probiota



BEREND TILLEMMA
Co-Founder

Passionate about innovation in nutrition, track record in fundamental cancer research, innovations in composite materials and Li-ion battery technology, established start-ups in food additives and seaweed technologies.

Roles:
Co-Founder
Seaweed Food Solutions
Probiotic & Microbiome R&D
BOX NV
Co-Founder
Aprolife



BOX NV
Founding Partner

Private accelerator with extensive experience investing in very early stage, high-potential startups. 80% success rate working with more than 30 portfolio companies and exits.

Other investment examples:
Bifika
Eatch
Gash
Dutch Structuring Technologies

02. Market Approach

DID YOU KNOW?

EATING TOO FEW POSITIVE FOODS IS A BIGGER HEALTH RISK THAN EATING TOO MANY NEGATIVE ONES.

*Although sodium, sugar, and fat have been the main focus of diet policy debate in the past two decades, our assessment shows that the leading dietary risk factors for mortality are diets high in sodium, low in whole grains, low in fruit, low in nuts and seeds, low in vegetables, and low in omega-3 fatty acids, each accounting for more than 2% of global deaths.

This finding suggests that dietary policies focusing on promoting the intake of components of diet for which current intake is less than the optimal level might have a greater effect than policies only targeting sugar and fat, highlighting the need for a comprehensive food system interventions to promote the production, distribution, and consumption of these foods across nations.

BMJ 2017;355:e01327. doi:10.1136/bmj.e01327. Published online first 2017. <http://www.bmj.com/content/355/e01327>

Food as medicine?

- Mass market food is generally unhealthy
- Major brands are slow to innovate and reformulate
- When they do, it generally relies on 'reducing the bad' (HFSS) ... **not improving the good**
- Swapping just one or two shopping items can drive positive changes to health

We believe in the power of added good to drive benefits in public health



Poor diet is responsible for
1 in 5 deaths globally



Thousands of studies show the
microbiome plays a vital role in
health



Diet is also the **biggest driver**
of microbiome diversity and
make-up

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A MICROBIOME REVOLUTION

At one end of the microbiome industry there has been a surge in investment in biotech companies that focus on high-value therapeutics and nutritional solutions in the pharmaceutical and medical spaces.

These solutions are clinically effective, but come as high priced medical treatments or expensive supplement pills.

At the other end, there has been a clear growth in demand for consumer friendly foods and drinks with higher levels of fibre or based on traditional fermentation techniques

Many of these solutions are 'trendy' and tasty ... but have little direct validation for their ingredients.

Until now, it has been difficult to bring clinically validated ingredients and technologies from the medical and consumer health landscape into wider CPG-friendly formats.

THERAPEUTICS & DRUG DISCOVERY

Huge interest and VC investment in biotech focusing on therapeutics and drug discovery based on advanced microbiome science.

NUTRITIONAL SUPPLEMENTS

Probiotics & prebiotics have seen huge market growth as they build strong clinical evidence for new ingredients.

BLUE OCEAN

A clear opportunity to create truly consumer-friendly foods & drinks that leverage next-gen science & successful formats.

DAIRY & FERMENTED FOODS

Yoghurts, fermented milks, kefir, and kombucha are all very 'trendy' with shoppers and are often claimed as 'superfoods' but most lack scientific validation.

HIGH-FIBER FOODS

Traditional high-fiber foods are slowly evolving to incorporate more messaging around the microbiome & gut health.



MARKET EVOLUTION



GLOBAL GROWTH IS SET TO CONTINUE, WITH STRONGEST GROWTH IN EMERGING CATEGORIES LIKE PREBIOTICS AND POSTBIOTICS



By combining next-gen microbiome science with the concepts and trends from sports & active nutrition there is a clear path to develop microbiome positive foods and drinks.

MICROBIOME SCIENCE
X
SPORTS & ACTIVE
NUTRITION



Sports nutrition as a framework



Critical Assumptions

- 1 People interested in gut health want new formats and flavours
- 2 Sports nutrition consumers are interested in gut health and the microbiome
- 3 Retailers and potential brand partners are looking for better solutions in the gut health and microbiome space

MARKET OPPORTUNITY

The global market for Health & Wellness foods and drinks was **\$743 billion** in 2019, with 8% CAGR predicted to 2024.

Top formats include

- Healthy Soda & functional waters
- Snacks & Bars
- Baked Goods

Sports & Active is worth **\$17 billion** globally, having seen 18% CAGR (2016-2020)

Strong growth is predicted in non-protein focused product offerings including RTD beverages and bar formats.

The global market for probiotics, prebiotics and synbiotics was more than **\$50 billion** in 2019, with more than 75% of revenues from functional food and dairy formats.

Double-digit growth is predicted in prebiotics, synbiotics and postbiotics in the next decade.

A GLOBAL MARKET



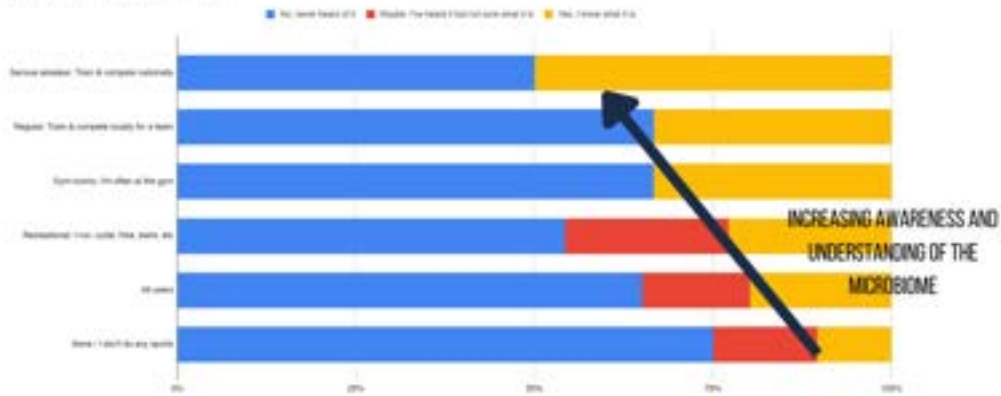
THE MICROBIOME MAINSTREAM

- There is a clear and growing opportunity for 'mainstreaming' and 'snackifying' gut health
- Many major multinationals are too big & slow to adapt and take the opportunity
- Major investors and FMCG agree, with multiple investments in (and acquisitions of) well-positioned start-ups, plus the launch of multiple 'startup challenges' focused on gut health in recent years
- Agile start-ups are perfectly positioned to capitalise, with huge returns for those who get it right



The more active and 'sporty' a person is, the higher their awareness and understanding of the microbiome is ...

Have you heard of the microbiome?



Data from Advanced Medical survey of 1000 UK consumers

03. Innovation & NPD

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The probiotic problem

Despite representing the biggest part of the market currently, there are significant problems associated with probiotics.

These issues have been a major reason for the popularity of probiotics in dietary supplements and their lack of success into wider FMCG applications.



Postbiotics: A new solution

Postbiotics

A postbiotic is a preparation of inactivated microorganisms and/or their components that confers a health benefit on the host.

COMPONENTS OF A POSTBIOTIC:



- ✓ Derived from microorganisms, but a postbiotic does not have to be derived from a probiotic.
- ✓ A deliberate process to terminate cell viability must be applied. The final postbiotic must contain inactivated microbial cells and/or metabolites or cell components.
- ✓ Significant number of viable cells remaining in final product.
- ✓ Evidence of a health benefit in the target host.
- ✓ Assessment of safety of the postbiotic preparation for the intended use.

Innovation pipeline

We are passionate about providing exactly the right ingredients, at the doses you need ... and in a way that provides flexibility for the end consumer and our future innovation.

This provides multiple technical challenges and checkboxes:

- **Ingredient scouting:** B2B market & literature to identify potential target ingredients & strains
- **Clinical Data:** Is there robust human trial data for microbiome driven benefits?
- **Technical specs:** Does it fit our specs for shelf life, stability, flavour, solubility, etc.
- **Cost & Availability:** Can we achieve a realistic cost per dose that allows us to go where we want to go

It took us 18 months of research and more than 50 different combination trials before we found the perfect mix.

Our obsession for the perfect mix of microbiome boosting ingredients means that we're still trying out new prototypes all the time.

Scouting B2B ingredients market

Clinical studies on specific strains & ingredients

List of ingredients with high level clinical data

Database of ingredients clinical and technical fit

- B2B samples
- Prototyping
- Testing
- Feedback

First Product

18 month journey

Meet AB-1

The most flexible powder for microbiome health yet

- ✓ Tasteless
- ✓ Odourless
- ✓ Soluble
- ✓ Heat Stable
- ✓ Easy to Use
- ✓ Clinically Validated



Meet AB-1

The most flexible powder for microbiome health yet

PREBIOTICS

Substantiated doses of two leading precision prebiotics

↑ Bifidobacteria | ↑ Stool Consistency | ↑ Quality of Life Score | ↑ Immune Markers | ↑ SCFAs
↓ Abdominal Pain | ↓ Bloating | ↓ Constipation | ↓ Cortisol | ↓ Inflammatory Markers | ↓ Diarrhoea

POSTBIOTICS

Clinically validated heat-killed lactic acid bacteria

↑ Immune Markers | ↓ Incidence of Infections (URTI, Cold) | ↑ Hyaluronic Acid | ↓ Inflammation

COLLAGEN

5 grams gold-standard collagen peptides per serve

↑ Gut Barrier Integrity | ↓ Joint Pain | ↑ Skin Elasticity | ↓ Wrinkles | Sports Nutrition Applications





	Amount per sachet	per 100g
Energy (kJ)	123	1235
Energy (kcal)	29	293
Fat	0	0.02
Saturated Fat	0	0.02
Carbohydrate	0.3	3.7
of which sugars	0.3	3.1
Protein	4.8	48.1
Fibre	3.7	36.7
Salt	0.1	0.9

14 X 10G - SERVINGS - 140G -

HIGH FIBER

KETO FRIENDLY

100% ADDITIVES FREE

Powered by
Bimuno



PROUD MEMBER OF
GLOBAL PREBIOTIC ASSOCIATION

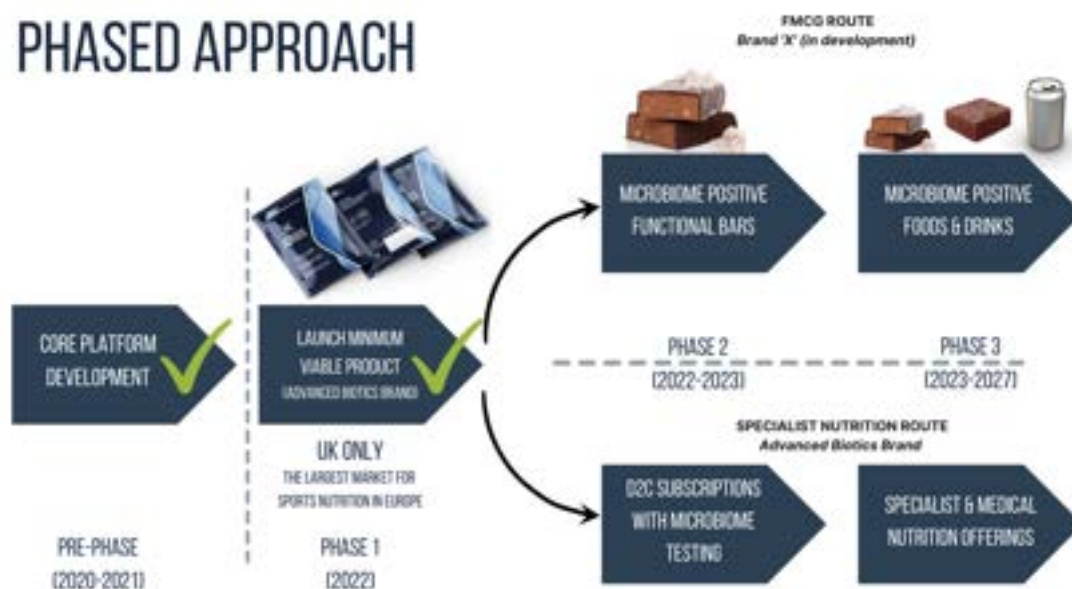
MADE IN
THE UK 



Product Development

Under a new brand, we are developing and launching a range of tasty, easy to use, science-backed, microbiome positive food and drinks, initially aimed at the sports and active lifestyle user.

PHASED APPROACH



IP & Advantage



Knowledge

Our deep knowledge of prebiotic and postbiotic technologies has led to the creation of our own database of ingredients and is leading us to the development and commercialisation of new postbiotic technologies.



Production

Proprietary production methods for combining our selected ingredients in a specific way. The specific forms of ingredients used and methods to combine them give us significant advantages.



Supply

Exclusivity agreements with key supplier mean we cannot be copied. No other brand can combine our two key ingredients in the same way as us.

Further clinical validation of our existing products and innovations

Identification of 'best in class' prebiotics & postbiotics already on the market (via our own proprietary database)

Development of new postbiotic ingredients in specific areas of interest

Identify and commercialise prebiotic ingredients and technologies from upcycled and waste streams

Ongoing Research & IP Development

04. Branding & Communication

**WE ARE
MICROBIOME POSITIVE**



How #guthealth and
#microbiome is shown in ads and
socials.



How it looks & feels in
real life!



Talking about gut health and
microbiome doesn't need to be full
of clichés and filters

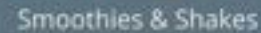
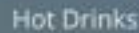


**ADVANCED
BIOTICS**

Clinically effective support
for your microbiome

NO

You can also sprinkle it on - or mix it into - foods, soups, sauces, porridge
... or even bake with it!

[illegible]

