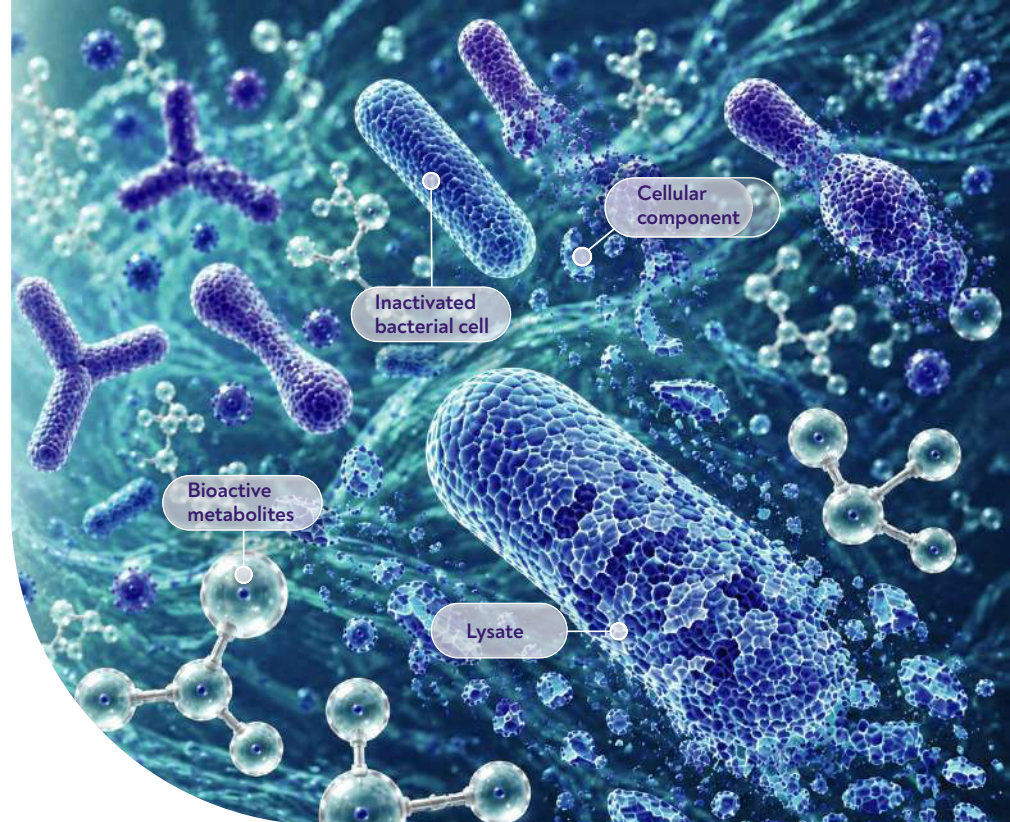




Postbiotic Solutions

for Modern Clinical Practice



The Next Evolution in Microbiota Therapy



FIRST-MOVER OPPORTUNITY

Enter an emerging
category ahead of
the market.



GROWING MARKET

Awareness and demand
for postbiotic solutions
are increasing worldwide.



STABLE

No live microorganisms.
High formulation
stability.



READY TO ACT

Bioactive compounds
delivered directly.

Postbiotics - a logical evolution in microbiota therapy

Transition from variability to a predictable, controlled and reproducible clinical effect

Market context in microbiota therapy

The current market is characterized by:

- ✓ limited differentiation between products.
- ✓ Increasing demands from clinical practice.
- ✓ insufficient predictability and reproducibility of clinical effect.

New requirements in clinical practice:



higher
reliability



reproducible
effect



predictable
outcome



A need is emerging for a new standard in microbiota therapy.



This necessitates the search for a new approach with greater predictability and reproducibility.

Limitations of the probiotic model

Clinical experience has shown that the effectiveness of approaches based on viable microorganisms is closely linked to their survival in the organism.

Survivability in the organism is limited by:

- ✓ limited availability of adhesion sites
- ✓ competition with the resident microbiota
- ✓ limited biocompatibility with the host
- ✓ sensitivity to external factors

Necessary criteria for a new standard:



independence
from microbial
viability



limited influence
of external
factors



biocompatibility
with the host
and microbiota



A trend is emerging toward eliminating dependence on microbial viability.

Postbiotics - a logical evolution in microbiota therapy

Transition from variability to a predictable, controlled and reproducible clinical effect

Shift in the scientific paradigm

Contemporary scientific data are changing the understanding of the mechanisms through which microorganisms influence human health.

The clinical microbial effect is determined by:

- ✓ synthesized bioactive metabolites
- ✓ functional cellular components

From	To
Viable microorganisms	Bioactive metabolites
Colonization	Functional effect
Variability	Predictability
Sensitivity	Stability



The focus shifts from viability to functional effect.

New therapeutic approach

Existing probiotic model:

Assumes in vivo synthesis of bioactive metabolites
(dependent on survival)

Viable microorganisms

Survival in the intestinal tract

Variable synthesis of bioactive metabolites

Variable clinical effect

New therapeutic model:

Directly provides bioactive microbial components
(independent of viability)

~~Viable microorganisms~~

Bioactive microbial components

Direct biological mechanism

Predictable clinical effect



A shift from dependence on microbial survival to the direct delivery of bioactive components.

Postbiotics - a new therapeutic model

*Providing bioactive microbial components. No viable microorganisms.
Direct mechanism of action.*

Postbiotics - The Next Evolution in Microbiome Therapy



Matrix: Inactivated microbial cells and their cellular components



Bioactive components in a directly available form



No live microorganisms



Scientific and clinical development of postbiotics

Microbiome science is entering a stage of functional maturity. The postbiotic model is establishing itself as a logical next step.

Postbiotics demonstrate:

- ✓ stability and high clinical potential
- ✓ limited influence of external factors



Result: a new market segment with high potential is emerging

Biological rationale of postbiotics

The clinical effect is determined by the direct action of bioactive microbial components.

Direct action ensures:

- ✓ immediate biological effect
- ✓ reproducible clinical outcome
- ✓ controllable biological response

Postbiotics are characterized by:

Viability	Not required
Stability	Constant
Effect	Predictable
Controllability	Manageable
Safety	High



Result: predictable, reproducible, and controllable clinical effect

Postbiotics - a new therapeutic model

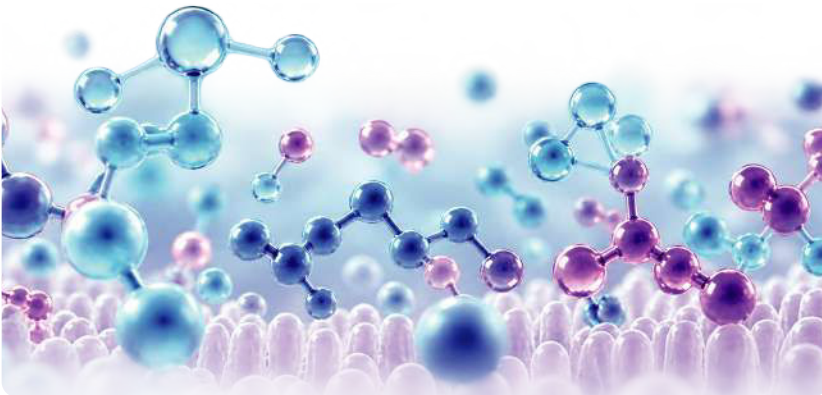
*Providing bioactive microbial components. No viable microorganisms.
Direct mechanism of action.*

Mechanism of action of postbiotics

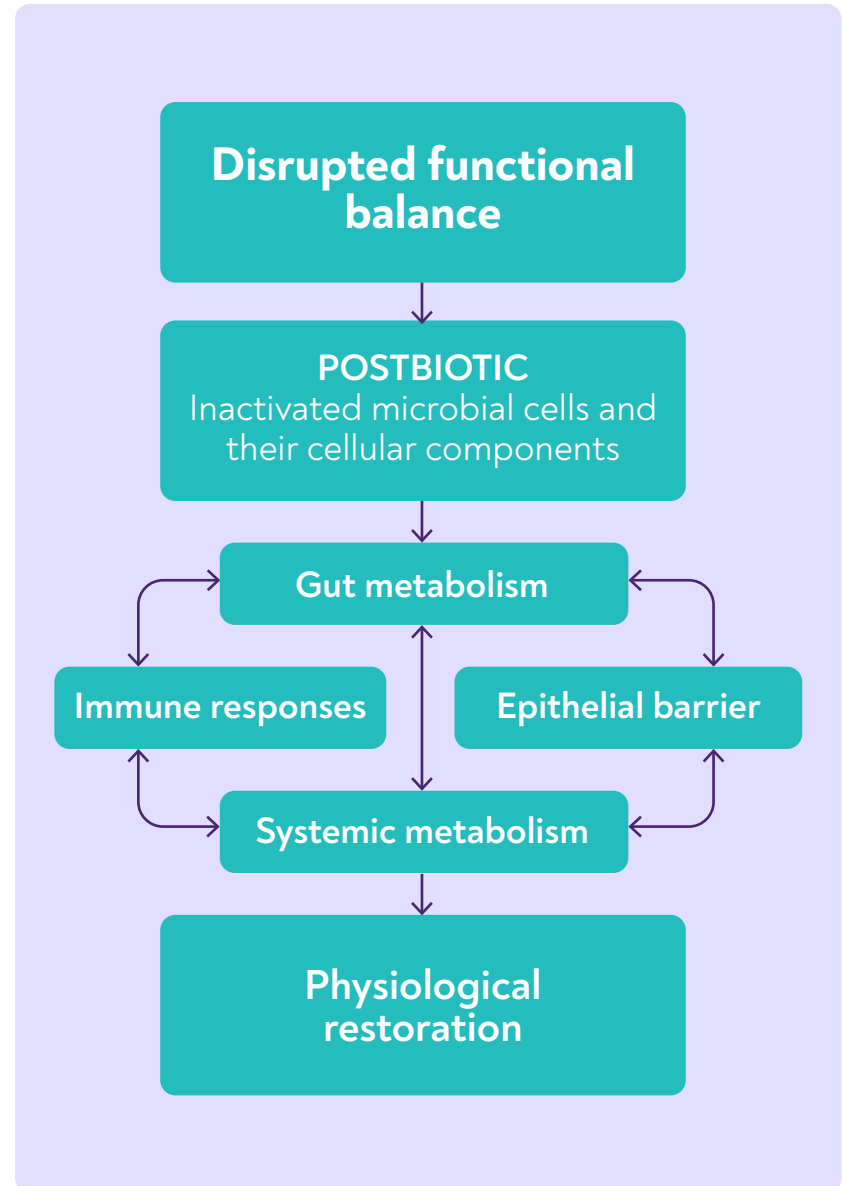
Bioactive microbial components contained in postbiotics directly interact with the physiological systems of the organism.

Following oral administration:

- ✓ directly interact with epithelial cells
- ✓ modulate receptor-mediated signaling
- ✓ influence immune and metabolic pathways



Result: restoration of functional balance with a predictable effect



Bibiotic® – Advanced Postbiotics

Step into the future, beyond probiotics.

Science-driven postbiotic platform

Bioactive Composition:

Inactivated bacterial cells, cellular components, and bioactive metabolites.

Technological Foundation:

A science- and technology-driven approach to the development of effective postbiotic solutions.

The platform is based on:

- standardized technological process
- modern scientific concepts
- standardized compositions
- strictly controlled processes
- systematic quality control
- full traceability

This positions Bibiotic® as a reliable foundation for predictable and effective postbiotic solutions.



Result:
safety, efficacy, and predictability.

Scientific and regulatory framework

The **Bibiotic®** postbiotic platform is developed based on a structured scientific approach, in compliance with standards for quality, safety, and regulatory requirements.

Scientific and regulatory rigor are integrated at every stage of the product lifecycle.

Key regulatory parameters:

- taxonomic identification
- safety profile assessment
- analytical control of composition
- EFSA/QPS reference framework



Result: *scientifically validated and regulatory-compliant solutions.*

Bibiotic® – Advanced Postbiotics

Step into the future, beyond probiotics.

Controlled manufacturing

The **Bibiotic®** postbiotic products are manufactured through strictly controlled and standardized technological processes, ensuring consistent product quality.

The manufacturing model is designed to minimize variability and ensure high reproducibility.

Key strategic priorities



standardized technological process



multi-level quality control



production in compliance with GMP and ISO



Result: minimal variability and maximum reproducibility.

Strategic Direction for Development

The **Bibiotic®**'s strategy is focused on establishing postbiotics as an effective, controllable, and predictable approach in modern microbiota therapy.

This strategy forms the foundation for establishing postbiotics as a new standard.

Key manufacturing principles:



expansion of the product portfolio



establishment of clinical validation



development of R&D activities



long-term international partnerships



Direction: establishing a new standard in microbiota therapy.

Postbiotic solutions for modern clinical practice

Based on the integrated postbiotic platform, **Bibiotic®** develops a portfolio of solutions targeting key physiological systems and clinical needs.



Microbiome
and intestinal
balance



Metabolism
and hepatic
function



Modulation of
the immune
system



Dermal
barrier and
skin functions



Oral microbiome
and dental
biofilm



Infant Gut
Microbiome and
Immunity