

TITLE:

Disrupting the OTC & Consumer Health Industry
**Mesoporous materials platform for
pharmaceutical OTC applications**

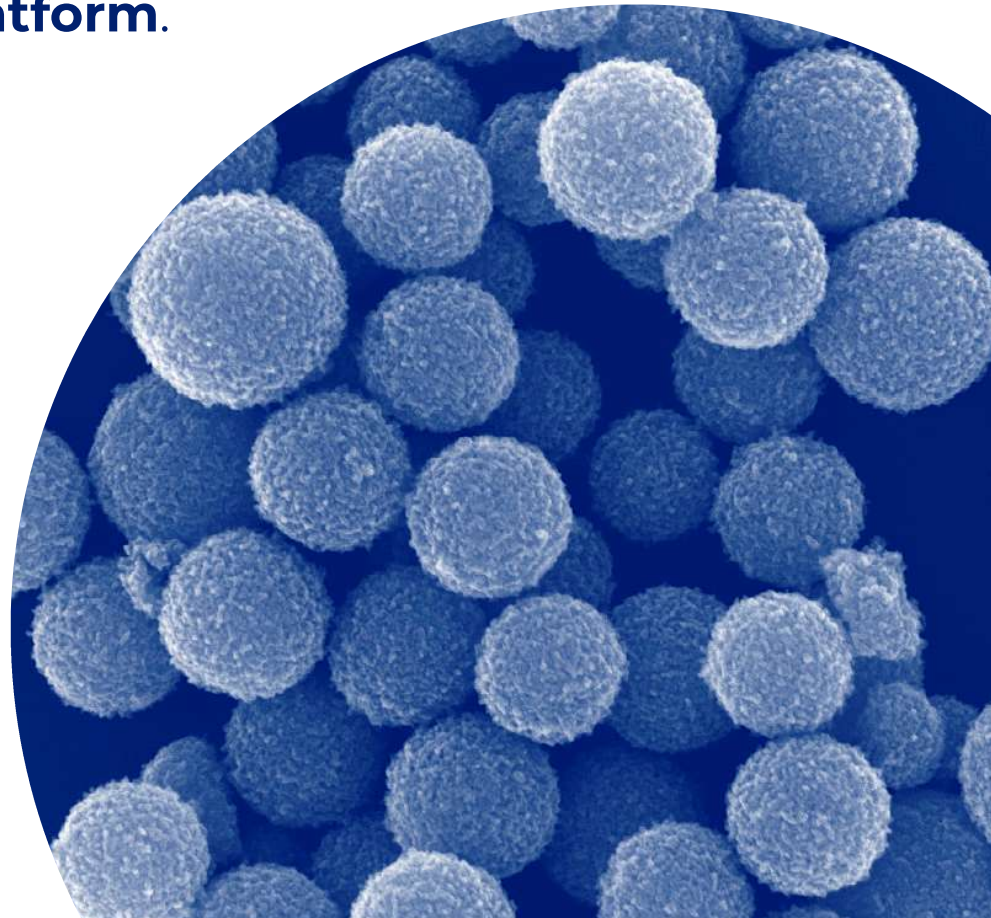
SPEAKER:

Andrea Castellin, COO, Brenta



Brenta is a **research-driven CDMO** for supporting pharmaceutical industry with in-house **mesoporous platform**.

Brenta **mesoporous platform** elevates product performance by **enhancing pharmacokinetics** and **improving bioavailability of active ingredients**.



Brenta Platform: an easy implementation

Current Status

95% of today non-prescription drug products were previously marketed for the same indication by prescription

Regulatory and market requirements?

Brenta enforces existing drug substances **with well-known positive safety profile into new products** for use in self-medication

Why are we relevant?

Where do we act?

- 1 Improve drug substance **solubility** and **permeability**
- 2 Increase efficiency and **reduce** dosage and multiple **intakes**
- 3 Increase **homogeneity** in drug product formulation and **patient compliance**
- 4 Improve lack of proportional **relation** between **dose** and **performance**

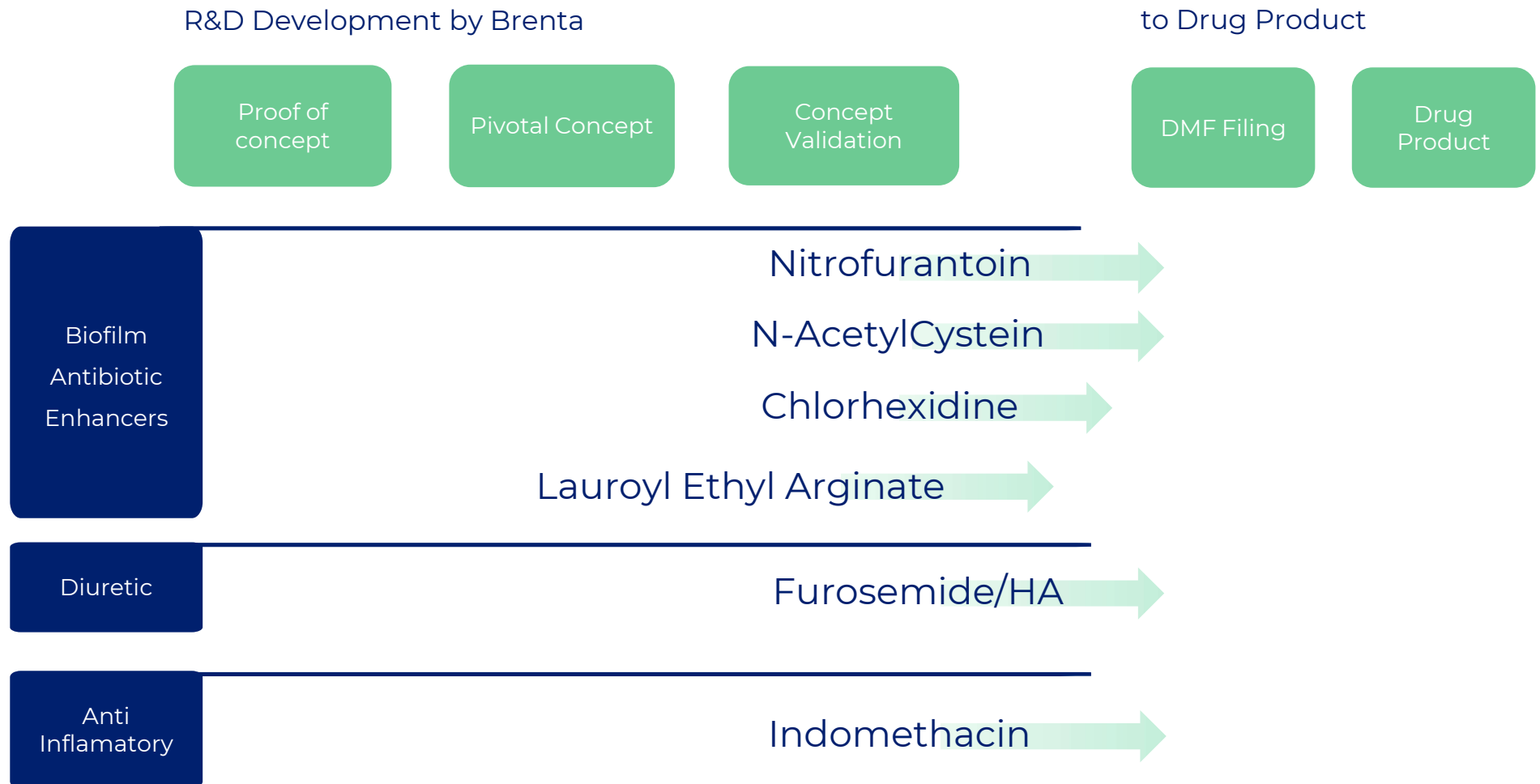
And Brenta is a safe platform...

Non irritability and **preliminary Biocompatibility Safety** testing on materials:

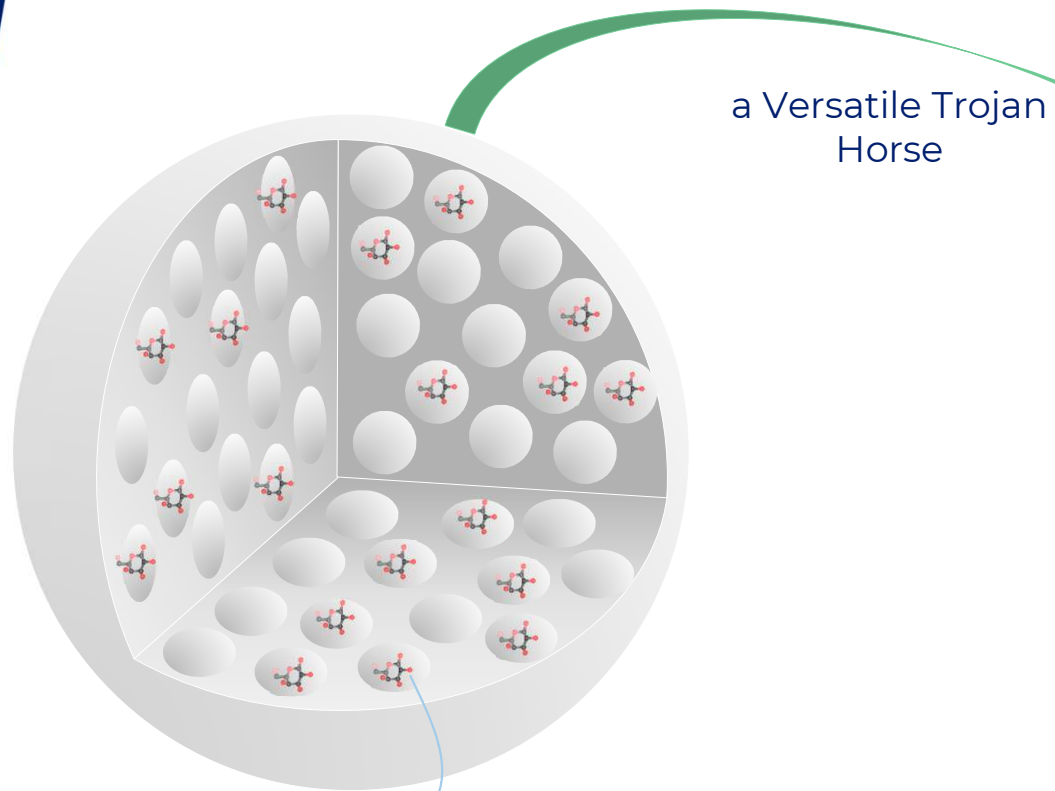
- No Skin irritation
- Oral mucosa tolerability
- Intestinal mucosa tolerability
- No Eye irritation

Testing made according to accredited UNI CEI EN ISO/IEC 17025 and certified for Good Laboratory Practice (Dir 2004/9/EC) and ISO 9001:2015

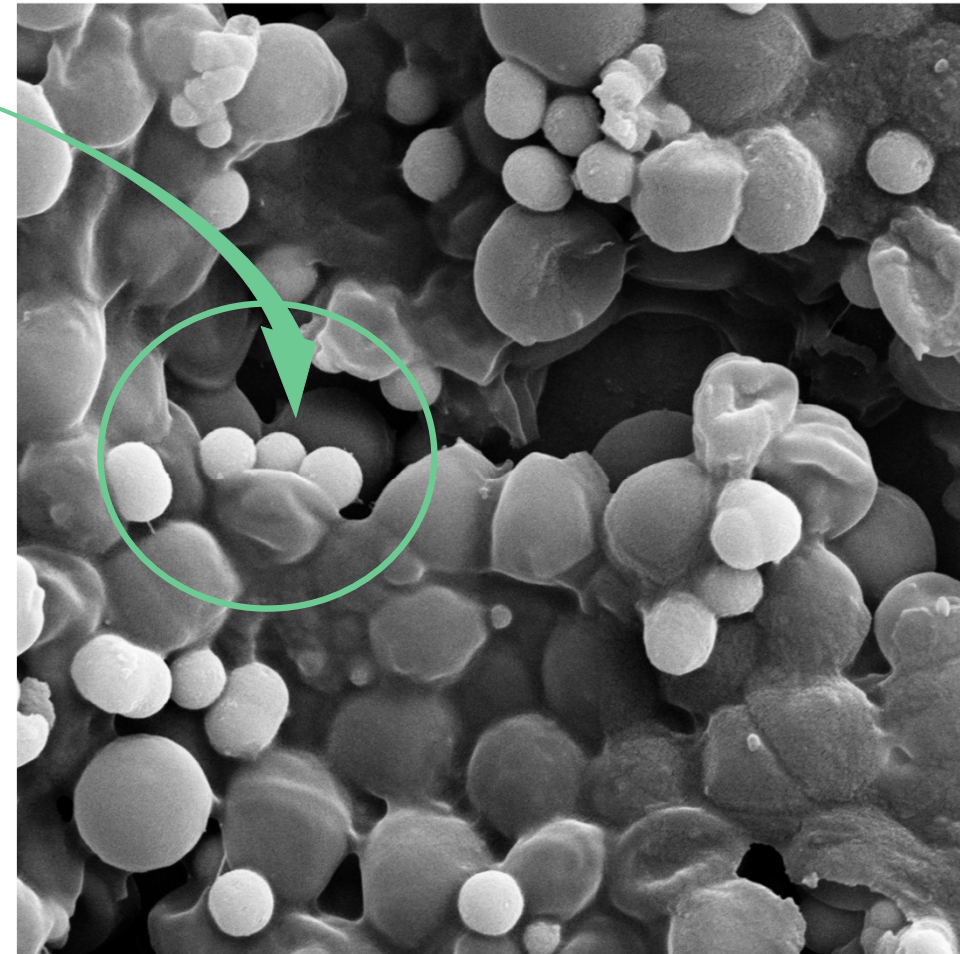
Drug Delivery solutions pipeline for OTC and CH opportunities



Wound care and eye care development Biofilm Antibiotic Enhancers

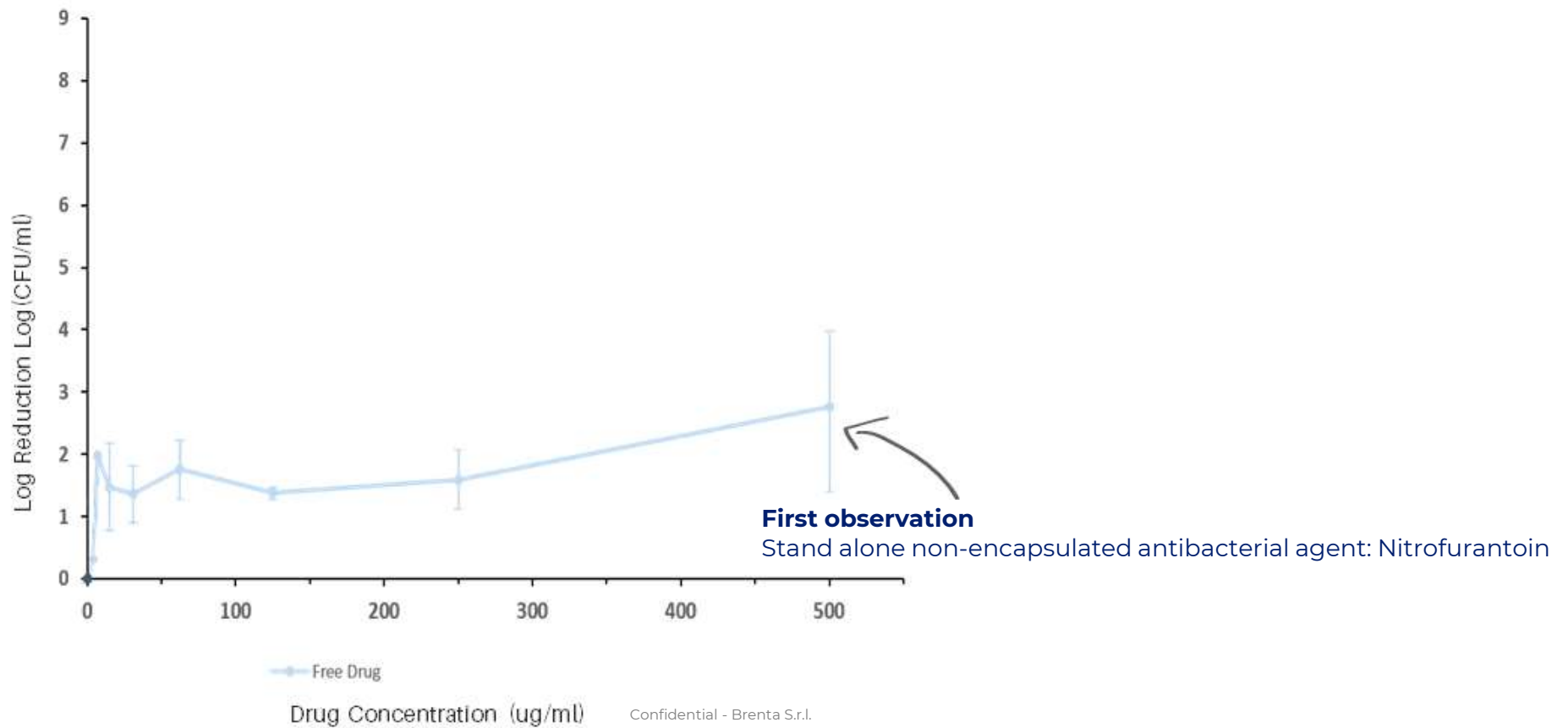


Small molecules,
such as antibiotics



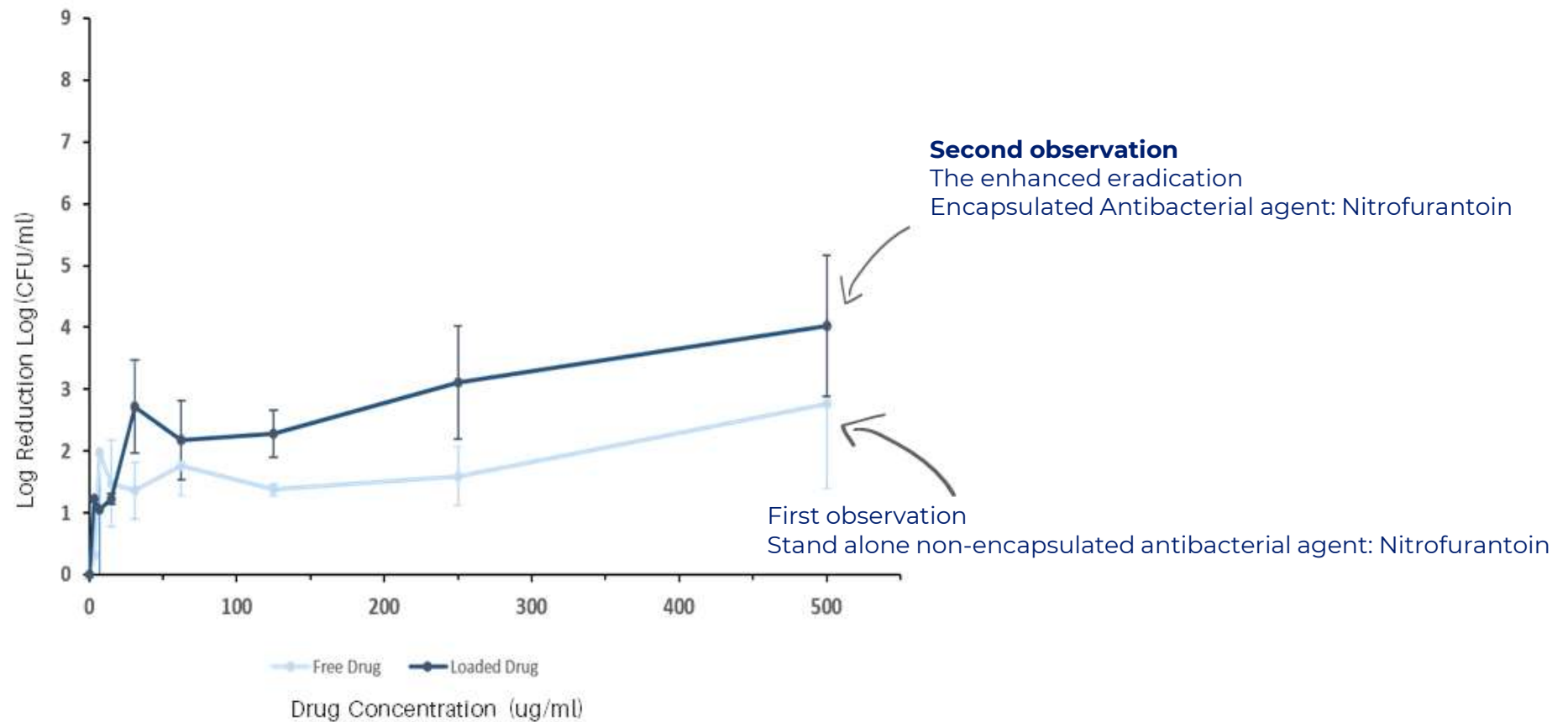
Combination vs *K. pneumoniae* biofilm eradication

Synergy as result of chemical compatibility



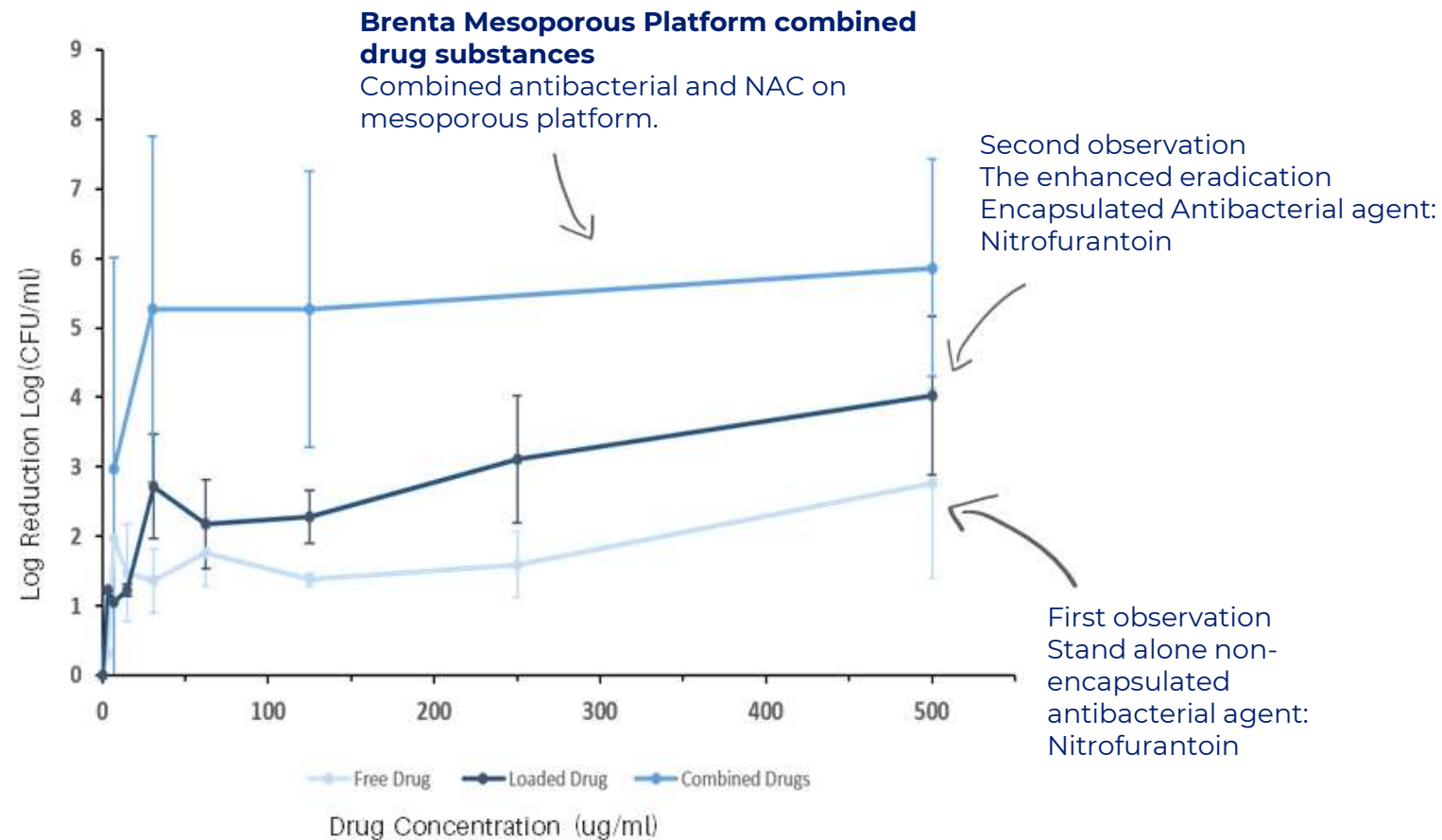
Combination vs *K. pneumoniae* biofilm eradication

Synergy as result of chemical compatibility

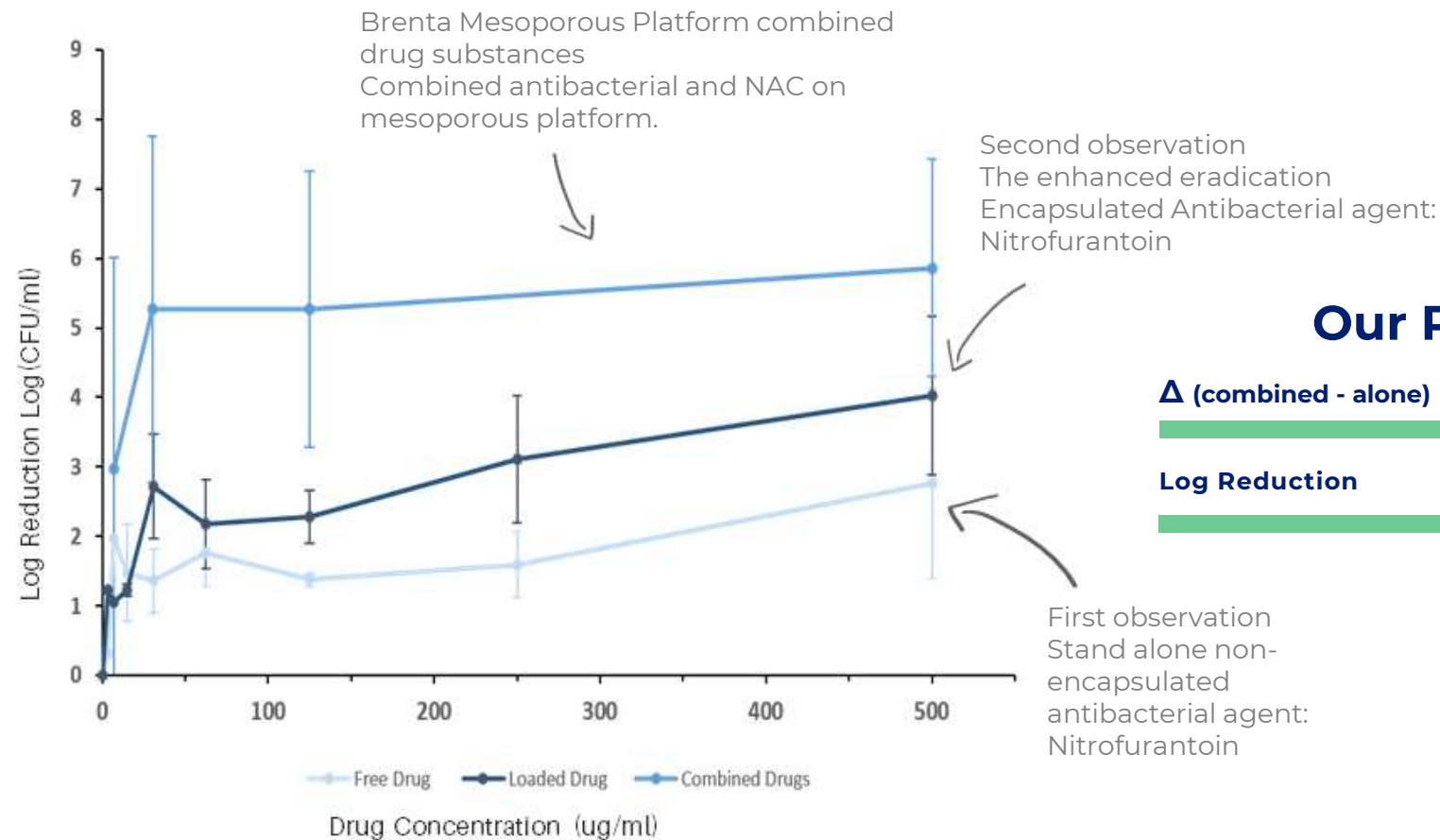


Combination vs K. pneumoniae biofilm eradication

Synergy as result of chemical compatibility



Combination vs K. pneumoniae biofilm eradication Synergy as result of chemical compatibility



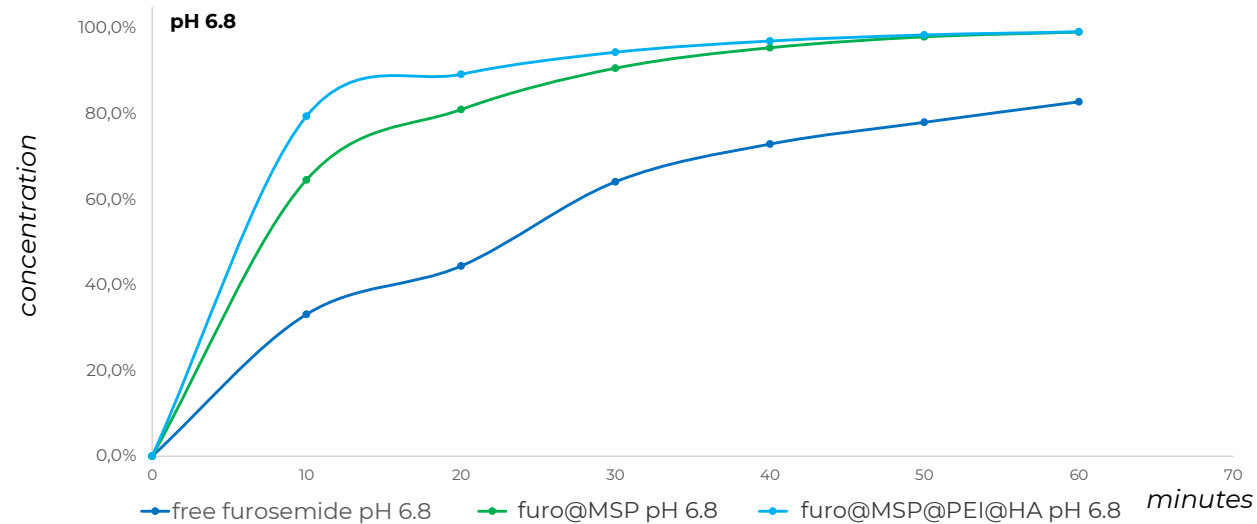
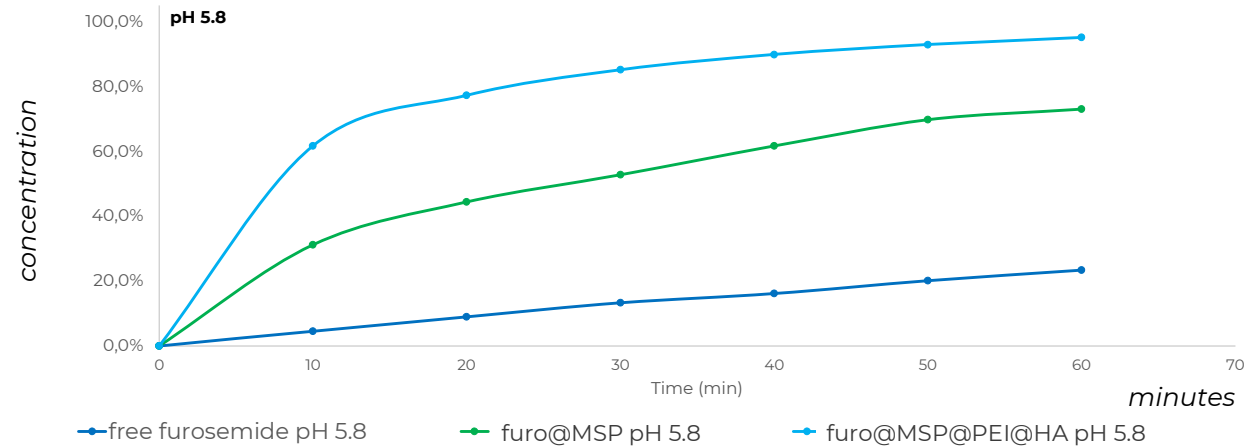
Our Results

Δ (combined - alone)	10^3
Log Reduction	6.0 (99,9999%)

We could expect that encapsulated Antibacterial agents will behave in the same way

- 1 Chlorhexidine
- 2 N-AcetylCystein (NAC)
- 3 Lauroyl Ethyl Arginate

Furosemide/Hyaluronic acid loading and increasing of API solubility



furo@MSP means **Furosemide**

encapsulated Mesoporous Silica

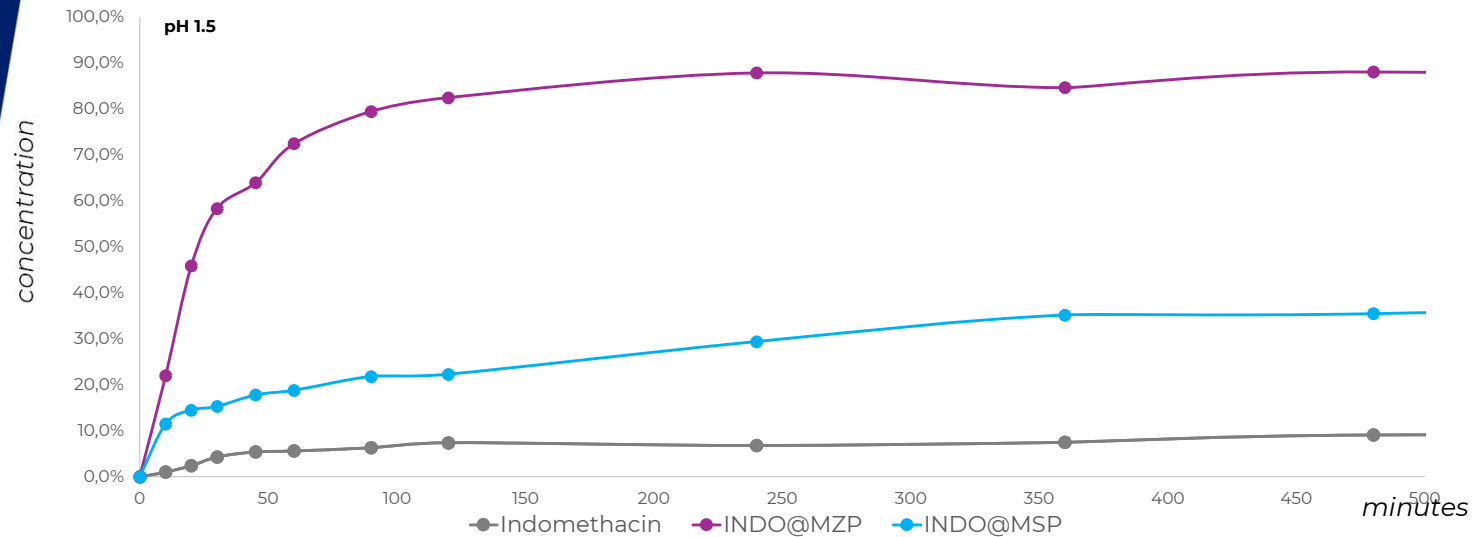
nanostructured Particles

furo@MSP@PEI@HA **Furosemide**

MSP coated with Hyaluronic Acid

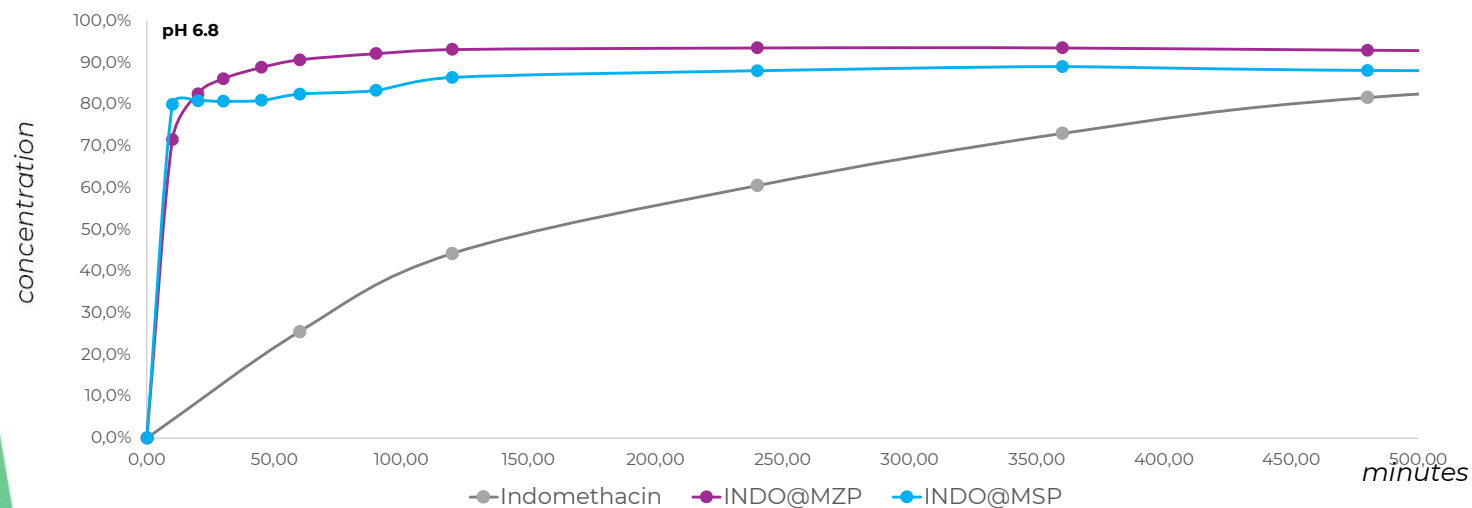
- ✓ Furosemide, a BCS-IV API low solubility and permeability
- ✓ **efficiency 50 – 70 %w/w**
- ✓ **Improved solubility** of loaded API
- ✓ Successful **coating with HA as permeability enhancer**

Improves Pharmacokinetics of Indomethacin



MZP: Mesoporous Zirconia nanostructured Particles

- ✓ Indomethacin, BCS-II API
low solubility
- ✓ **efficiency of 10-85 %w/w**
- ✓ **dramatic increase of solubility** and inherent availability for passive transport



Take Aways

Brenta Mesoporous Platform



Improves Pharmacokinetics



Improves Products Performance



Product Repositioning



Patient Compliance

Want to know more about our technology?



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www.brenta.net