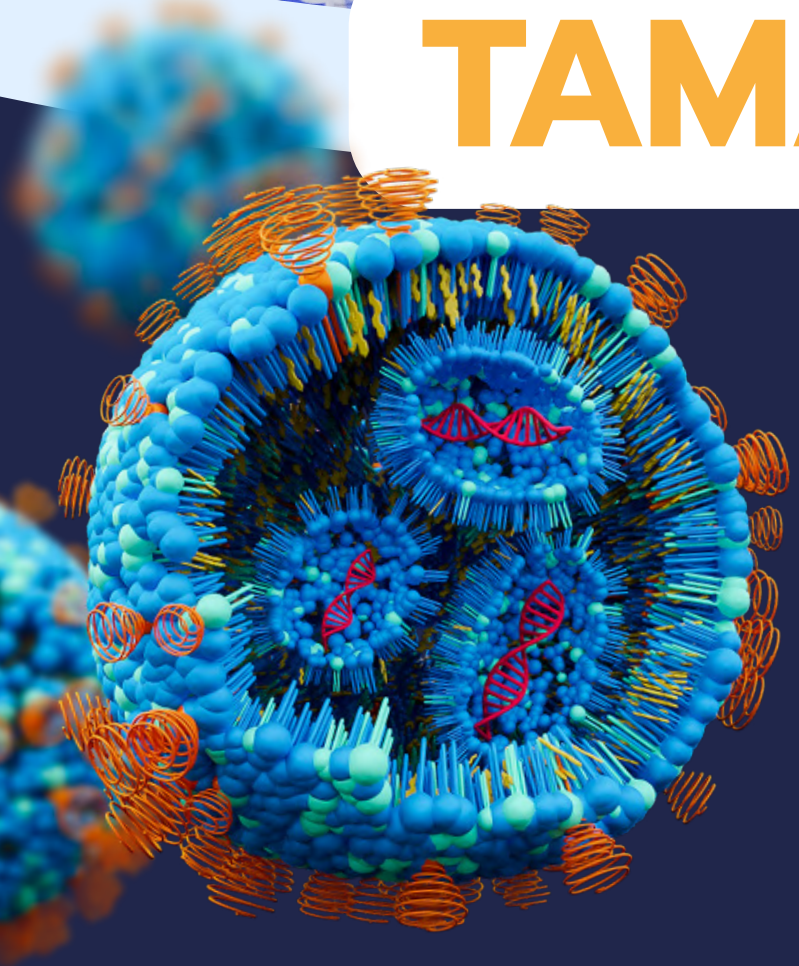
inside Therapeutics

TAMARA



Nanoparticle formulation system

All-in-one R&D system

Easy to use

What is TAMARA?

The TAMARA Nanoparticle Formulation System is a plug-and-play microfluidic platform **covering all R&D stages**, ensuring **controlled nanoparticle synthesis** with optimal sample usage & reusable chips.

It is the perfect companion for any nanoparticle specialist - **from beginners to experts** - looking for a comprehensive, user friendly, and efficient nanoparticle system for the development of **RNA-LNP nanomedicines**.

Benefits:

- ✓ One system from screening to in-vivo
- ✓ Best size, PDI, EE% & repeatability
- ✓ One platform for all nanoparticles
- ✓ Maximized reagent use
- ✓ Speed up your lab routine
- ✓ Zero formulation loses

Key features:

From 200 µL to 30 mL of nanoparticle

No dead volume for maximized reagent use

Encapsulation efficiency **EE% > 98%** **& PDI < 0.2** for RNA-LNP

Reusable chips and reservoirs

Optimal size control (50 to 200 nm) and **repeatability** (±3%)

Less than 2 minutes per run

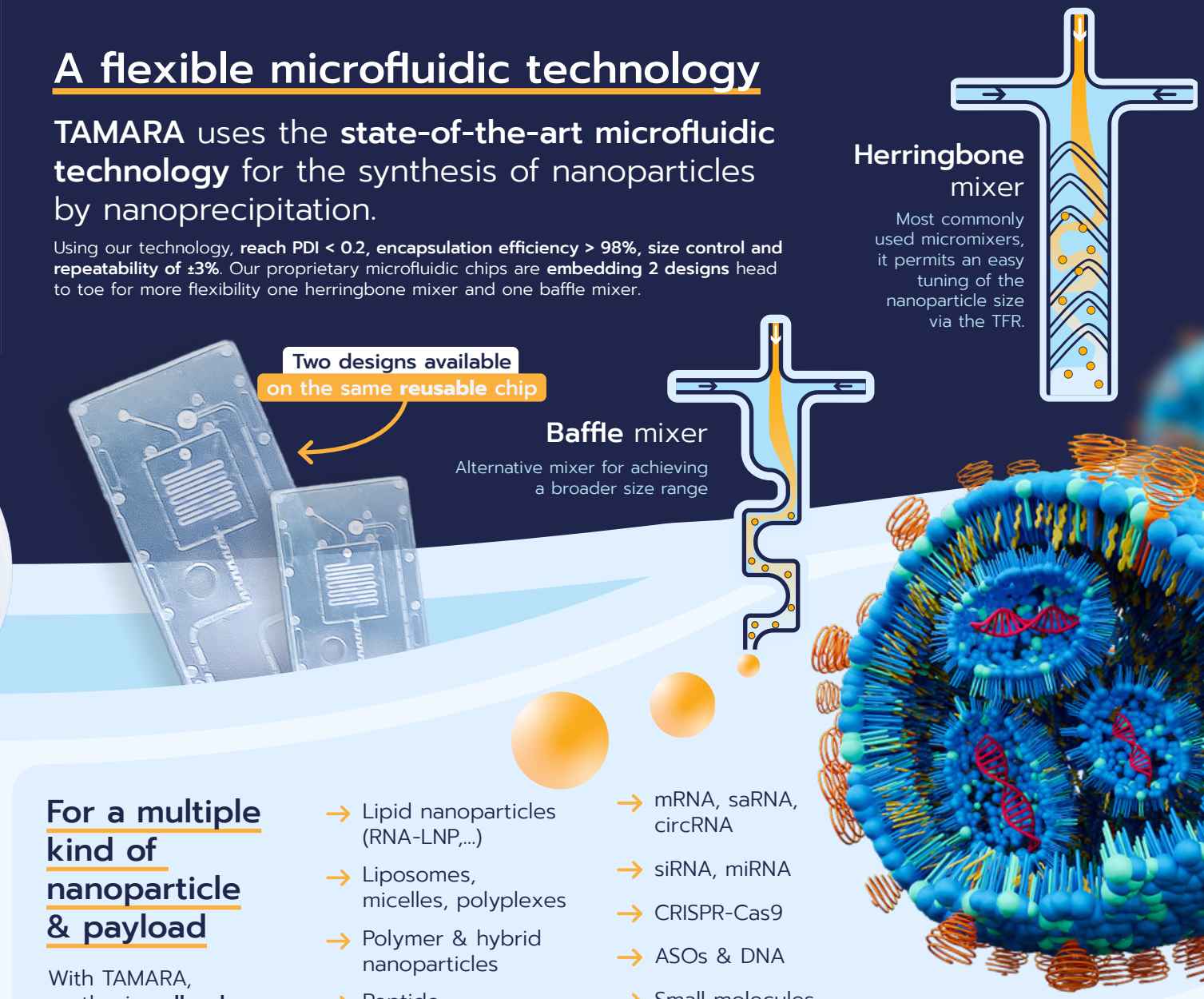
They **trust** us:

Cambridge University Press · Lilly · Servier · moderna · Penn · Institut Pasteur · OSE Immunotherapeutics · ETH zürich · cnrs · USC

A flexible microfluidic technology

TAMARA uses the **state-of-the-art microfluidic technology** for the synthesis of nanoparticles by nanoprecipitation.

Using our technology, **reach PDI < 0.2, encapsulation efficiency > 98%, size control and repeatability of ±3%**. Our proprietary microfluidic chips are **embedding 2 designs** head to toe for more flexibility one herringbone mixer and one baffle mixer.



For a multiple kind of nanoparticle & payload

With TAMARA, synthesize **all polymer and lipid based nanoparticles**

- Lipid nanoparticles (RNA-LNP,...)
- Liposomes, micelles, polyplexes
- Polymer & hybrid nanoparticles
- Peptide nanoparticles

- mRNA, saRNA, circRNA
- siRNA, miRNA
- CRISPR-Cas9
- ASOs & DNA
- Small molecules & peptides

With an intuitive operation

We've set up TAMARA and performed our first mock run. **I'm absolutely blown away by how user friendly, efficient and straight to the point this system is!**

Dzenan Kovacic
Research and development scientist in stealth biotech company

It's only through daily use that the true value of a machine becomes apparent. When PhD students consistently gravitate toward one device while overlooking others, it speaks volumes. **Tamara is in high demand, an endorsement in itself!**

Prof. Raymond Schiffelers
Full Professor at UMC Utrecht, President of Nanomedicine European Technology Platform (ETPN), Editor of IJP and JCR.

1. Set your parameters

2. Pipette your liquids

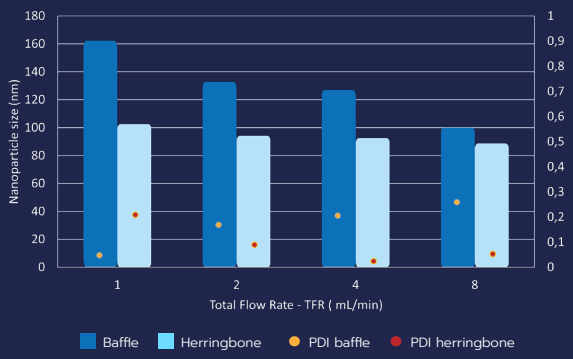
3. Close, run & collect

Ultimate size & PDI control

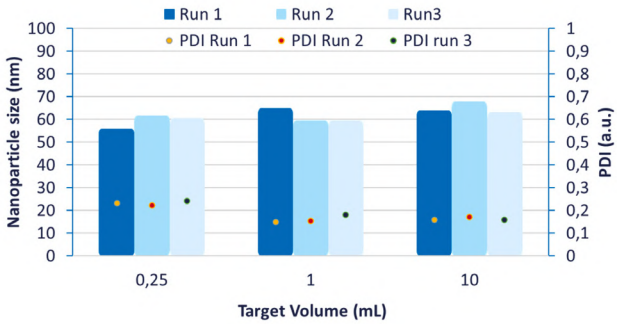
TAMARA system embeds advances microfluidics technology for **utmost precision** in nanoparticle formulation:

- → **Fine-tune nanoparticle size** with ease for optimal delivery
- → **Adjust formulation parameters** (TFR & FRR) effortlessly using a user-friendly interface
- → Leverage advanced microfluidic technology for **highly uniform nanoparticle populations** (PDI <0.2)

Flow rate influence on nanoparticle size and PDI using both an herringbone and a baffle design (TAMARA platform)



Batch to batch reproducibility at different volumes with herringbone mixer



Repeatability & scalability

TAMARA's optimized fluidic design ensures **seamless transitions and repeatability** across scales:

- → Handle volumes **from 0.2 to 30 mL** effortlessly, enabling smooth transitions from initial screening to preclinical studies
- → Achieve excellent repeatability with **less than 3% variation from batch to batch**

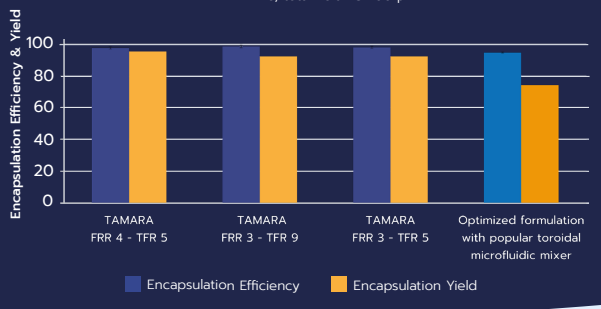
Optimized encapsulation

The TAMARA platform leverages cutting-edge microfluidic technology to **enhance API encapsulation**:

- → Achieve **up to 98% encapsulation efficiency** with RNA-LNP, surpassing other nanoparticle synthesis methods
- → **Maximize reagent usage** with excellent encapsulation yield, even at small volumes

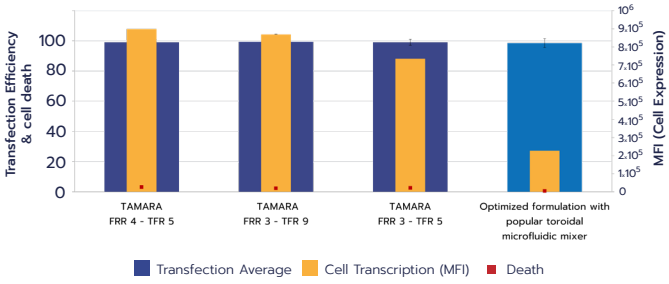
TAMARA vs Optimized Toroidal Mixer formulation Comparison: Encapsulation efficiency & Encapsulation Yield

Characterization of RNA-LNP using proprietary lipid post filtration, Ribogreen protocol, N:P: 10, total volume 700 µL



TAMARA vs Optimized Toroidal formulation Comparison: Transfection efficiency, Cell expression by Fluorescence & Death

Characterization of RNA-LNP using proprietary lipid post filtration, Mean Fluorescence (MFI) carried out by Flow cytometry, N:P: 10



Optimal in-vitro expression

TAMARA generally **surpasses mainstream nanoparticle formulation systems** in in vitro expression:

- → **Superior Transfection Performance:** Formulating RNA-LNP with TAMARA allows for optimal transfection efficiency.
- → **Exceeding Expectations:** LNPs formulated using the TAMARA system consistently outperform those created with mainstream toroidal mixers.

Reach out **to learn more**

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