Our **company**

At Quantoom Biosciences, scientists and engineers are committed to solving some of the biggest challenges facing (sa)mRNA-based vaccines and therapeutics production.

Located in Belgium, Quantoom Biosciences thrives in a dynamic biotech ecosystem, driving innovation in RNA (i.e. mRNA and saRNA) production to make life-changing therapies available to everyone, everywhere.

BELGIUM

Quantoom Biosciences Headquarters.
Showroom for Ntensify® technologies.

Visit our website

www.quantoom.com

Rue de la Maîtrise 11
1400 Nivelles
BELGIUM

Get in touch!

bd@quantoom.com
www.quantoom.com

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Ntensify® mano

Quantoom Biosciences

saRNA production and purification kit for up to 3.2 mg

saRNA
ALSO IN mRNA

The **Ntensify® mano** is an all-in-one, cost-effective saRNA production and purification kit combining convenience, efficiency, and control. It includes all reagents needed to produce up to 3.2 mg of purified saRNA in less than half a day.

This saRNA production kit performs the **Ntensify® process** for cost-effective production of purified saRNA, with a high-quality profile while minimizing impurities.



Click or scan the QR code to watch the video presentation

Key **figures**

Up to **3.2 mg** of purified saRNA

From linear DNA to purified saRNA in under **3 hours**

1 pot IVT with co-transcriptional capping

1-step magnetic silica bead-based purification

Redesigned Process

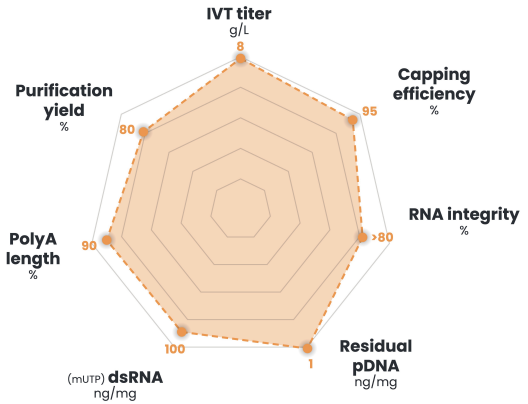
By opting for a single-step bead-based purification method to streamline DSP and reduce process-related losses.

Optimized Process

By optimizing the IVT & DSP to increase RNA quality, minimizing the DSP constraints.

Demonstrated by robust DoE

- > 2000 individual mRNA reactions
- > 500 individual saRNA reactions
- 100+ Different constructs tested
- Different mRNA Sizes (1 to 4kb)
- Different saRNA sizes (8 to 12Kb)



Achievable performances of the Ntensify® process related to process parameters and saRNA quality attributes.

We further developed our Ntensify® mRNA process for its use on saRNA

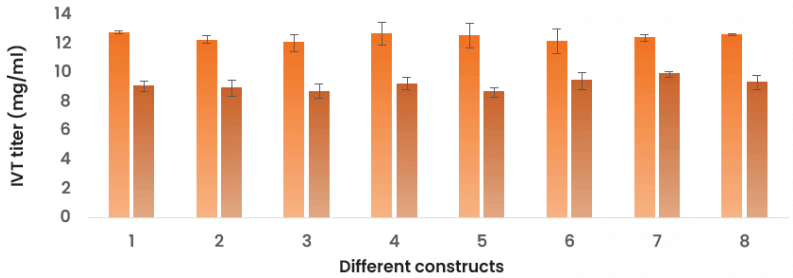
Study design

- 8 saRNA constructs (duplicated)
- 2 independent experiments
- Construct size: 8–12 kb

Key improvements

- Average yield >2× higher (vs. mRNA)
- Integrity +10% (for longer constructs)
- Enhanced performance across all constructs

Results showing consistent IVT titers averaging 8-12g/L, across a variety of constructs and a broad range of construct lengths

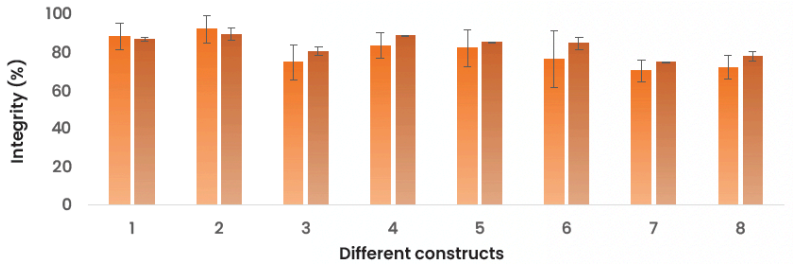


12.4 g/L

FOR OUR BEST PERFORMING PROCESS SETTINGS

Duplicates

Results showing consistent integrity measurements averaging 81.9% , across a variety of constructs and a broad range of construct lengths

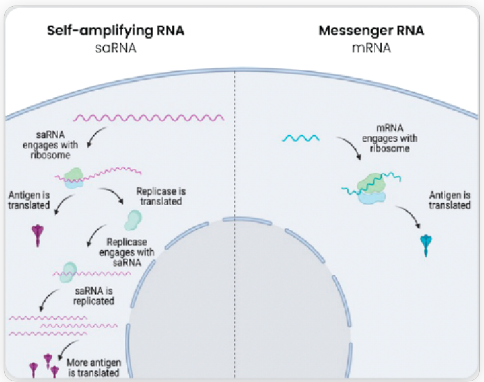


83.7 %

FOR OUR BEST PERFORMING PROCESS SETTINGS

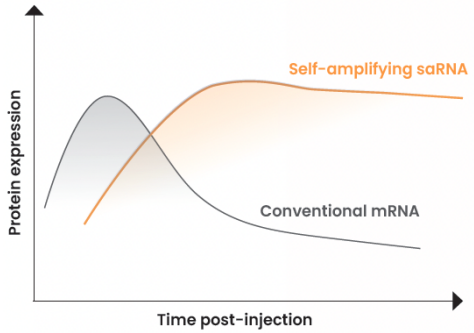
Duplicates

Beyond mRNA, **saRNA further increase vaccines affordability and efficacy**

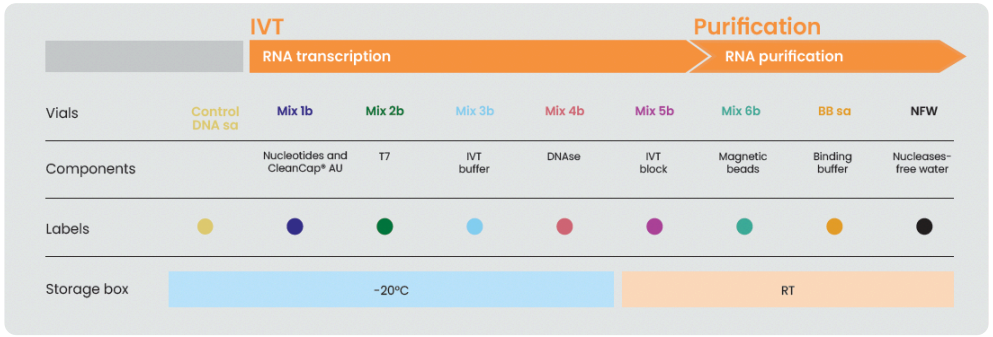


Source: DOI: 10.1042/bio_2021_142

Compared to mRNA, **saRNA provides a longer-lasting expression**



The kit contains 8 mixes, including a cap analog. saRNA can be produced in less than half a day and uses standard lab equipment such as a thermo-shaker, a vortex and a benchtop centrifuge, making it accessible to researchers of all experience levels.



Visualization of Ntensify® mano components and process: integrated IVT and purification.

Adopted by

CENTER FOR NEUROSCIENCE AND CELL BIOLOGY

«The Quantoom saRNA kit makes high-quality saRNA production fast and simple. It is now our benchmark in saRNA workflows»

Ntensify® **product line**

All the production technologies in our product line leverage the same Ntensify® process, at any scale. This confers reproducibility to our product line and enables consistency of CQA's and CPP's at every scale, from R&D to commercial production in GMP facilities.

mano	**micro**	**mini**	**midi** *flex*
			
Entry point for RNA construct assessment *In vitro & in vivo* studies	**Drug discovery & pre-clinical phase** Up to 96 constructs	**Drug discovery & pre-clinical phase** Up to 48 constructs	**Clinical trials & commercial production**
mRNA capacity per batch (purified naked mRNA)			
125 µg - 3 mg	400 µg – 100 mg	8 mg – 92 mg	0.1 g – 8 g
saRNA capacity per batch (purified naked saRNA)			
320 µg – 2.5 mg	640 µg – 128 mg	10 mg – 123 mg	0.128 g – 8 g
Level of automation & run duration			
Manual in 4 hours	From 4 to 6 hours	Automated in under 1 day	