

# StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit

## Non-modified RNA Technology for the Generation of iPSCs

### Overview

REPROCELL's latest evolution in the Stemgent RNA Reprogramming Technology combines unique non-modified reprogramming RNAs and microRNA technology and an immune ablating RNA cocktail to generate induced pluripotent stem cells (iPSCs). This novel [StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit](#) provides stem cell researchers with a new level of simplicity, versatility, and time savings.



### Key Benefits

- **Flexible 3<sup>rd</sup> Gen Reprogramming Technology generates human iPSC lines from multiple target cell types**

Enhanced reprogramming flexibility to support reprogramming of variety of human cells, including neonatal and adult fibroblasts, endothelial progenitor cells (EPCs) derived from fresh or frozen human peripheral blood or cord blood, and urine-derived progenitor cells (UPCs).

- **mRNA provides the fastest, easiest route to high-quality research iPSCs**

RNA reprogramming vectors are not retained in the cells, so no time-consuming screening for vector removal is required, saving 4-8 weeks of screening and passaging required by other non-integrating technologies studies.

- **The StemRNA 3<sup>rd</sup> Gen Reprogramming Kit utilizes rapid, streamlined protocols for out-of-the-box reprogramming success**

The xeno-free, feeder-free protocol does not require conditioned medium, eliminating time-consuming preparatory steps. The colonies are ready to pick and expand in as little as 10 to 14 days.

- **microRNA enhances reprogramming efficiency for difficult patient samples**

As few as 25,000 starting cells are needed to generate industry-leading efficiencies for fibroblasts (2 – 4%), EPCs (0.4 – 3%), and UPCs (0.1 – 0.5%). This high efficiency ensures successful reprogramming of difficult-to-reprogram patient samples caused by either high passage number or refractory primary cells.

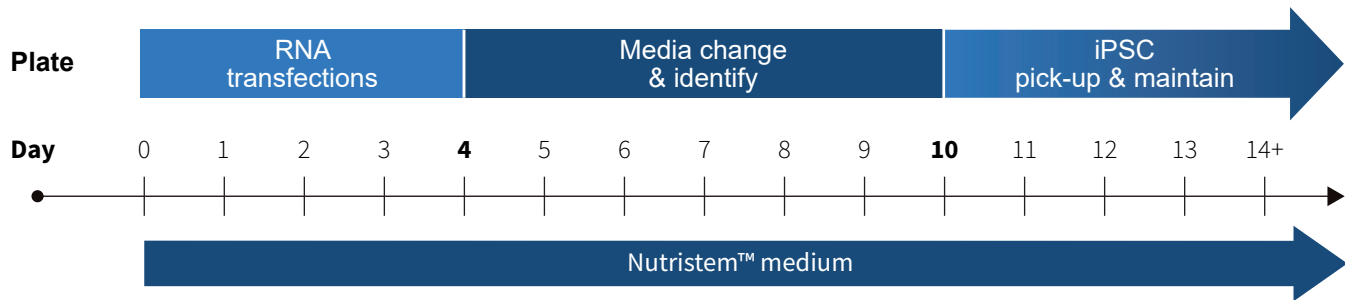
#### StemRNA™-3<sup>rd</sup> Gen Reprogramming Kit:

- Reprogramming RNAs (Oct4, Sox2, Klf4, c-Myc, Nanog and Lin28)
- Immune-ablating RNA cocktail (E3, K3, and B18)
- Reprogramming-associated microRNA cocktail

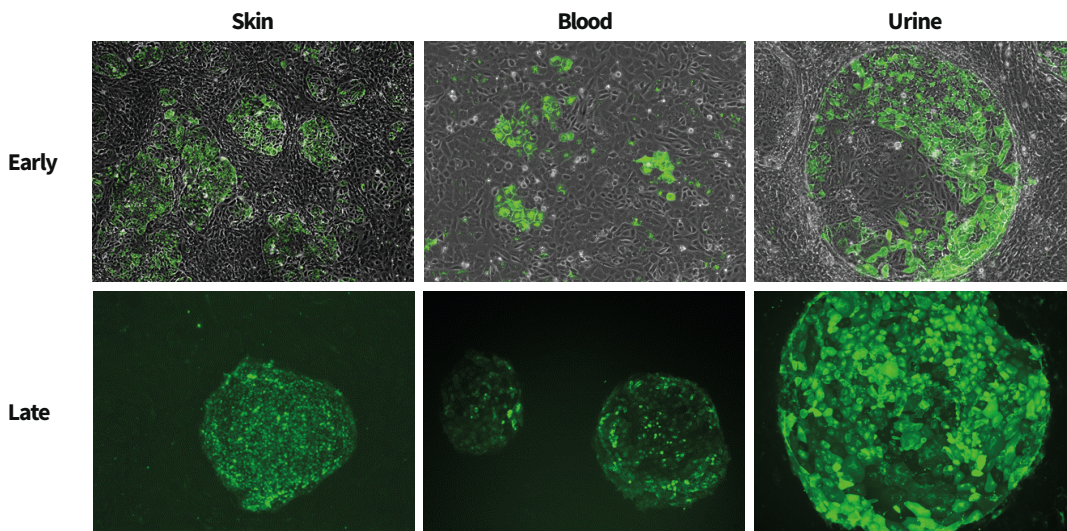
**Table 1: Features of the Stemgent StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit**

StemRNA-3 <sup>rd</sup> Gen Reprogramming Kit (Cat No. 00-0076)			
Features	Fibroblasts	Urine (UPCs)	Blood (EPCs)
Number of wells per kit	9	3	3
Number of transfections required	4	8	8
Days to primary iPSC colonies	10-14	12-14	12-14
Reprogramming efficiency	1-4%	0.1-1%	0.15-4%
Vector Screening	Not required	Not required	Not required

# StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit



**Figure 1: Timeline for Fibroblast Reprogramming.** Only a few reagents are required to reprogram primary fibro-blasts into iPSCs: StemRNA 3<sup>rd</sup> Gen Reprogramming Kit, NutriStem® hPSC XF Medium, iMatrix-511 substrate and a transfection reagent.



**Figure 2: Morphology of emerging iPSC colonies at early (day 6-10) and later (day 14) time points.** All cells are stained with TRA-1-60 antibody.

## Product Ordering Information

### The Stemgent® StemRNA™ 3<sup>rd</sup> Gen Reprogramming System

Product Name	Quantity	Cat. No.
<a href="#">Stemgent StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit</a>	1 kit with 3 components	00-0076
<a href="#">NutriStem™ hPSC XF Culture Medium</a>	500 mL	01-0005
<a href="#">FGF-Basic, Human Recombinant</a>	50 µg	03-0002
<a href="#">iMatrix-511</a>	350 µg (2 × 175 µg)	NP892-011

## Do it yourself – or let us do the work for you

The StemRNA™ 3<sup>rd</sup> Gen Reprogramming Kit (Cat. No. 00-0076) provides pre-formatted reprogramming reagents for research use by academic and commercial scientists.

We also have a collection of pre-made iPSC lines available. See our website for more information:

<https://www.reprocell.com/product-catalog/induced-pluripotent-stem-cells>

Alternatively, our experts are available to reprogram primary cells for you – giving you more time to focus on your research. Every REPROCELL service project is milestone-based and customizable to meet your needs, with a dedicated study director to keep you updated throughout the duration of your project.

Find out more on our website:

<https://www.reprocell.com/stem-cell-research>.



REPROCELL BRANDS

