Introduction to mRNA Reprogramming

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mRNA REPROGRAMMING TECHNOLOGY

- No risk of insertional mutagenesis
- Non-viral application
- Fast reprogramming kinetics
- High reprogramming efficiency (>1%)
- No screening required to eliminate viral remnants

NO SCREENING REQUIRED

Phase contrast images highlighting key morphology changes observed when reprogramming adult dermal fibroblasts from a patient with Parkinson’s disease using the Stemgent® mRNA Reprogramming System. Images taken at 4X magnification.

IDENTIFY iPS CELL COLONIES

Phases of mRNA reprogramming are shown on the timeline below. Phase-contrast images show key morphology changes observed during reprogramming:

Phase-contrast		Oct4		TRA-1-81

4X

Phase contrast images highlighting key morphology changes observed when reprogramming adult dermal fibroblasts from a patient with Parkinson’s disease using the Stemgent® mRNA Reprogramming System. Images taken at 4X magnification.

mRNA REPROGRAMMING TIMELINE

mRNA REPROGRAMMING TECHNOLOGY

Day 1 | Day 3 | Day 5 | Day 7 | Day 9 | Day 11 | Day 12 | Day 13

Phase contrast images highlighting key morphology changes observed when reprogramming adult dermal fibroblasts from a patient with Parkinson’s disease using the Stemgent® mRNA Reprogramming System. Images taken at 4X magnification.

NO SCREENING REQUIRED

mRNA

Plate | Transfect with mRNA | Identify, pick, and expand cells, characters, and bank lines

Sendai virus

Plate | Transduce with virus | Pick and transfer | Selective and screen for virus vectors | Expand cells, characters, and bank lines

Lentivirous

Plate | Transduce with virus | Pick and transfer | Expand cells, characters, and bank lines

SAFE, EFFICIENT, NON-INTEGRATING TECHNOLOGY

Reprogrammed colonies may be difficult to see in phase-contrast views. Identification using pluripotency marker expression, including live-staining for cell surface markers, can make identification of new iPS cell colonies in the culture easy.