

# B18R RNA (human codon optimized)

Synthetic RNA  
Cat. # SCR723

Pack size: 10 µg

Store at -80 °C

FOR RESEARCH USE ONLY.  
NOT FOR USE IN DIAGNOSTIC PROCEDURES.  
NOT FOR HUMAN OR ANIMAL CONSUMPTION.



Data Sheet

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## Background

Simplicon™ is a novel system to effect immediate high sustained protein expression of multiple genes into transfected cells without the risk of genome integration. The technology employs a single, synthetic, polycistronic, self-replicating RNA based on the Venezuelan equine encephalitis (VEE) genome<sup>1,2,3</sup>. The Simplicon™ RNA contains only genes encoding the VEE RNA replication machinery while the structural proteins that are required to make an infectious particle have been removed and replaced with the transgenes of interest.

Introduction and replication of the Simplicon™ RNA is expected to elicit a strong interferon response in transfected cells. To suppress the IFN responses, a Vaccinia virus protein<sup>4</sup>, B18R, is used for the original Simplicon™ technology.

The B18R RNA (human codon optimized) is a synthetic mRNA that is co-transfected with the Simplicon™ RNA to suppress the IFN responses. B18R RNA can also be used to prepare B18R conditioned medium by transfection into HFFs (Cat. No. SCC058). B18R RNA can also be used for co-transfection of any mRNAs to suppress the IFN responses and enable repeated transfection of mRNAs. Please refer to the User Guide for the Simplicon™ Expression System located on our website ([www.emdmillipore.com](http://www.emdmillipore.com)) for detailed protocols.

## Storage & Handling of Kit Components

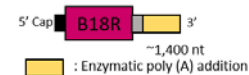
1. **B18R RNA (human codon optimized)**: (Cat. No. CS224516) One (1) vial containing 10 µL of RNA (1 µg/µL). Store at -80°C.

For best recovery, quick-spin the vials after thawing on ice. Do not vortex. Aliquot into sterile, nuclease-free eppendorf tubes on ice and store at -80°C. Limit repeated freeze-thaw cycles.

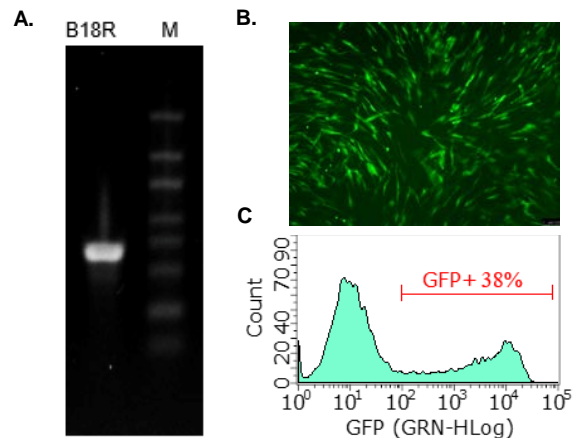
## Quality Control

- Discrete RNA band on RNA gel of appropriate size.
- 30-60% GFP-positive human foreskin fibroblasts (HFFs) with FACS analysis.

## Representative Data



**Figure 1.** 5' capped RNA was in vitro transcribed. The poly (A) tail was added by an enzymatic poly (A) adenylation reaction. cDNA for B18R was human codon optimized.



**Figure 2.** RNA gels and TagGFP2 expression in HFFs. **(A)** B18R RNA gel. Marker: 6, 4, 3, 2, 1.5, 1, 0.5, 0.2 kb. **(B, C)** TagGFP2 Simplicon™ RNA (E3L) and B18R RNA were co-transfected into HFFs with MessengerMax™ transfection Reagent. One day after transfection, GFP expression was analyzed by fluorescence microscopy and FACS.

## References

1. Yoshioka, N., et. al. Cell Stem Cell 2013, 13(2):246-254.
2. Yoshioka N., and Dowdy SF. PLoS One. 2017;12(7):e0182018. doi: 10.1371/journal.pone.0182018. eCollection 2017.
3. Pegg G., et al. Drug Metabolism and Pharmacokinetics, Volume 33, Issue 1, Supplement, 2018; Pages S33-S34
4. Perdiguero B., and Esteban M. J Interferon Cytokine Res. 2009;29(9):581-98. doi: 10.1089/jir.2009.0073.

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## RELATED PRODUCTS

Cat #	Description
SCR720	■ TagGFP2 Simplicon™ RNA (E3L) Kit
SCR721	■ TagRFP Simplicon™ RNA (E3L) Kit
SCR722	B18R-E3L RNA (human codon optimized for B18R and E3L)
SCR724	Simplicon™ Cloning Vector (E3L)
SCR725	TagGFP2 Simplicon™ Plasmid (E3L)
SCR726	TagRFP Simplicon™ Plasmid (E3L)
SCR727	B18R-E3L Plasmid (human codon optimized for B18R and E3L)
SCR728	B18R Plasmid (human codon optimized)
GF156	B18R protein (produced from insect cells)
GF197	B18R protein (produced from HEK 293 cells)

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