

# LentiBOOST® – Lentiviral Transduction Enhancer For Clinical Applications

## Mode of Action

LentiBOOST® is a highly effective, non-cytotoxic transduction enhancer for clinical application of lentiviral vectors. It is a universal poloxamer-based, receptor-independent adjuvant which facilitates fusion of lentivirus with the cell membrane, increases vector copy number, and significantly improves transduction efficiency.

## Ideal for a Wide Range of Cell Types

LentiBOOST® can be applied to a wide range of clinically relevant cell types, including CD34+ hematopoietic stem cells (HSC), mesenchymal stem cells (MSC), neuronal stem cells, primary T cells, hard-to-transduce murine T cells, NK cells, and fibroblasts. It is ideal for clinical transduction protocols for ex vivo gene therapies and CAR-T cell therapies.

## Benefits For Drug Development



**Up to 90% improved lentiviral transduction efficiency**

Increases the expression levels of therapeutic protein and success of clinical trials



**Increased and titratable vector copy number per cell**

Increased safety in line with FDA/EMA criteria



**Easy-to-use**

No need to change the existing transduction protocol



**Pharma and GMP grade batches**

GMP grade with all necessary documentation for clinical trials

Successful track record of integration into more than 20 Phase I/II and III clinical trials in the US and Europe as well as manufacturing of an approved product.

## Efficient For Various Cell Types

Cell Type	Transduction Efficiency Ratio with LentiBOOST®*	Cell Type	Transduction Efficiency Ratio with LentiBOOST®*
1. Human CD34+ HSC	1.6–7x	6. Human Fibroblasts	2x
2. Human CD8+ T cells	1.6–3x	7. Human PMBC	2–3x
3. Human CD4+ T cells	1.5x	8. Murine CD8+ T cells	2x
4. Human CD3+ T cells	6.5x	9. Murine CD4+ T cells	2.7x
5. Human NK cells	3x		

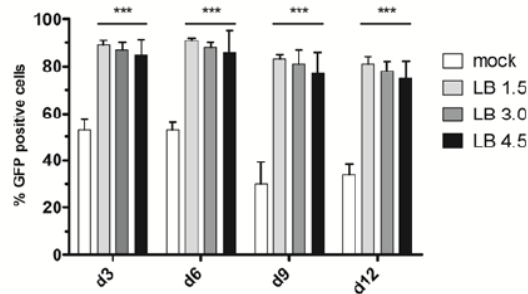
\*Unit: -fold increase in transduced cells. Based on customer data. The range depends on the experimental setup, vector design, and transduction protocols.

# The Results Speak for Themselves: LentiBOOST® in Action

Our customers use LentiBOOST® in numerous preclinical and clinical programs with different cell types. Below is selected data from the global research community already using LentiBOOST®.

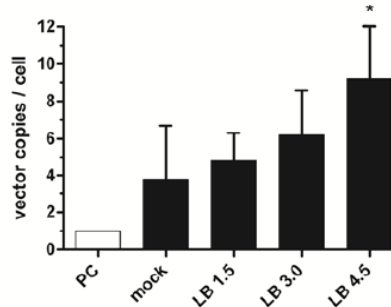
## Stable transduction increase for HSC

Number of GFP-positive human CD 34+ PBSC transduced with lentivirus and LentiBOOST® at various concentrations reach up to 80% at day 12 posttransduction.<sup>1</sup>



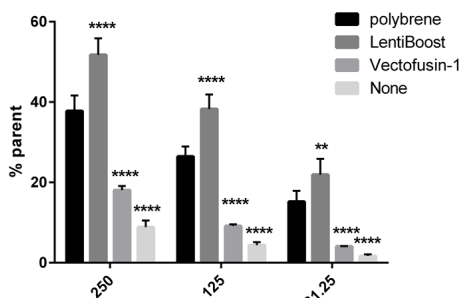
## Optimal copy number per cell

Using various LentiBOOST® concentrations, vector copy number per cell can be titrated to optimum alignment with EMA/FDA safety guidelines.<sup>1</sup>



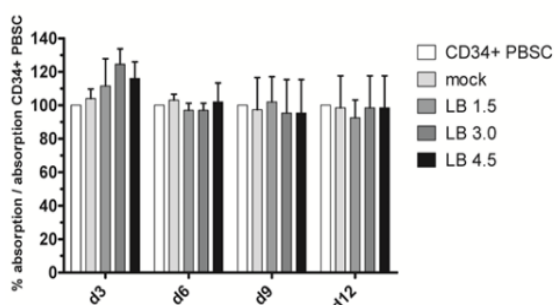
## For human T cells

T-cells were transfected with LentiBOOST® at different concentrations.<sup>3</sup>



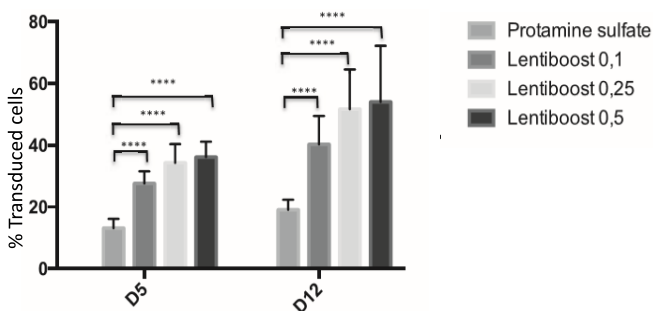
## Non-toxic to blood cells

HSC treated with LentiBOOST® demonstrated the same viability as the control cells.<sup>1</sup>



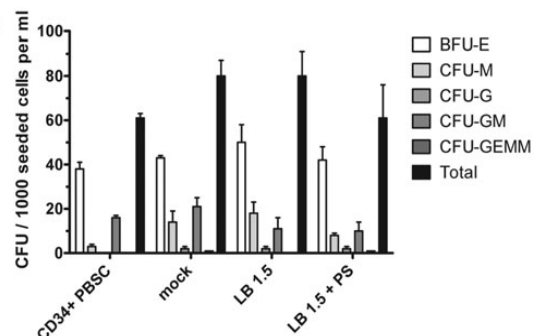
## For murine hard-to-transduce cells

Murine T-cells were transfected with LentiBOOST® at different concentrations.<sup>2</sup>



## Healthy HSC differentiation potential

LentiBOOST® does not affect the ability of HSC to differentiate into various hematopoietic lineages.<sup>1</sup>



<sup>1</sup> Hauber et al., Human Gene Therapy Methods, Volume 29, Number 2, 2018

<sup>2</sup> Delville et al., Molecular Therapy: Methods & Clinical Development Vol. 10 September 2018

<sup>3</sup> Customer Data, 2019

Do you need a quote, have technical questions, or want to know more about licensing options for clinical development?

Contact us at [lentiboost@sirion-biotech.com](mailto:lentiboost@sirion-biotech.com)