LentiBlast Premium Results.

1. Description

LentiBlast Premium is the ideal reagent to enhance lentiviral infection and transduction in any type of cells, adherent or in suspension, primary or cell lines. Its patented chemical composition allows to simultaneously neutralize electrostatic repulsions between membrane and viral particles and to enhance viral fusion with cell membrane. Due to a favorable "membrane permeable effect" limiting the transmembrane potential changes, LentiBlast Premium is non-toxic and totally compatible with cell viability and overcomes obstacles that prevent successful transduction (cell density, passage number, lentivirus purity, MOI, …).

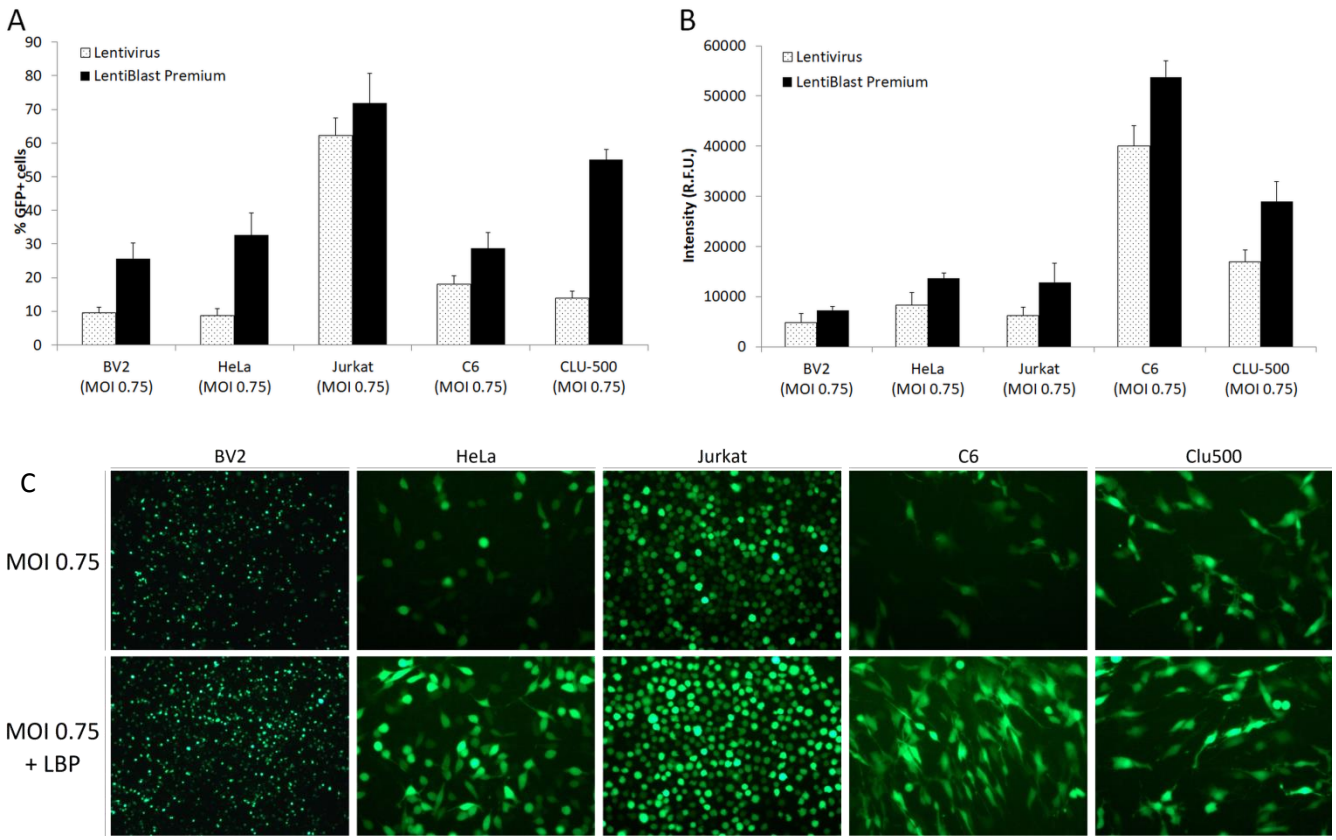
2. Storage and shipping condition

Storage & Shipping: Upon reception and for long-term use, store the LentiBlast Premium transfection reagent at -20°C - Stability: 1 year. The reagent is shipped at RT.

LentiBlast Premium enhances Lentiviral infection in any cell types.

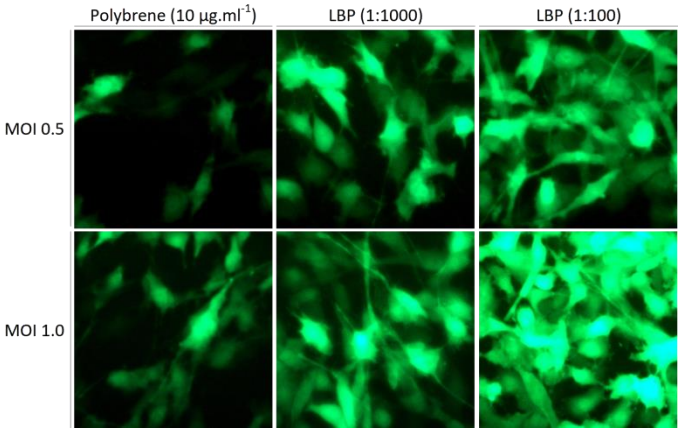
LentiBlast Premium enhances transduction efficiency in cell lines and enhances protein expression.

Cell lines were infected at MOI 0.75 (0.75 viral particles per cell) using a HIV-SFFV-GFP lentivirus in presence of LentiBlast Premium (LBP) at at 1:100th dilution. 72 hours after transduction, % of GFP positive cells (A) and total intensity (B) were analysed by flow cytometry and fluorescence microscopy (C).



The results demonstrated capacity of LBP to enhance infection and transduction in adherent and suspension cell lines.

NIH-3T3 cell line was infected with a lentivirus encoding GFP at two different MOI (0.5 and 1) in presence or not of polybrene (10 µg/mL) or two concentrations of LentiBlast (1:1000 and 1:100). Lentiviral transduction enhancer's efficiency was determined 72 h after transduction under fluorescence microscope.



Results demonstrate that LentiBlast dramatically improves lentiviral infection of adherent cells.

LentiBlast increases transduction of lentivirus in primary adherent and suspension cell lines and primary cells.

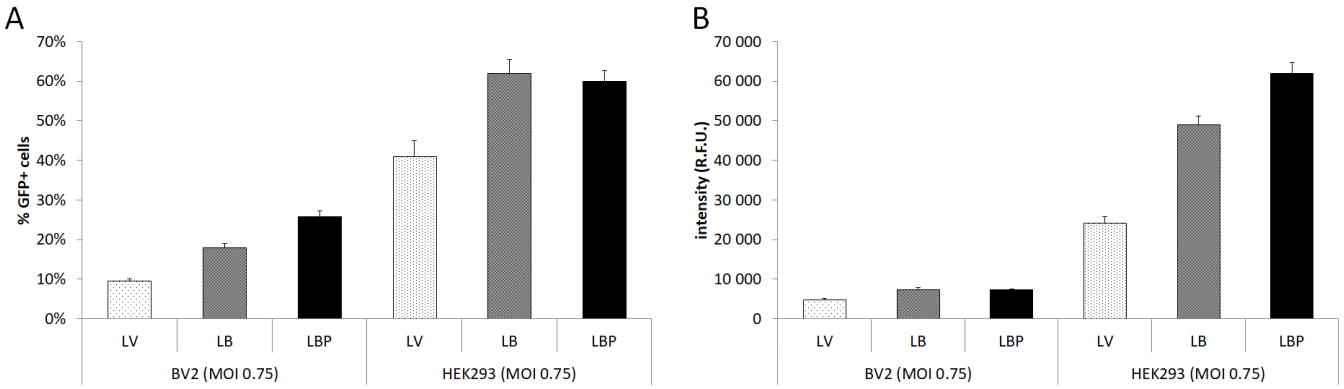
Below, a non-exhaustive list of adherent or suspension, cell lines or primary cells successfully transduced with retro/lentivirus adjuvanted with LentiBlast Premium

Cell Name	Origin
1321N1	Human brain astrocytoma
AU-565	Human mammary breast cancer adenocarcinoma
BMDM	Bone marrow derived macrophages
BV2	Mouse microglial cells
C2C12	Mouse myoblast cell line
C6	Rat brain Glioma
Cardiomyocytes	Fœtal heart
Cardiomyocytes	Coronary isolation
CLU500	Mouse Hypothalamic cell line
HEK-293	Embryonic kidney
HEK-293T	Human embryonic kidney
HeLa	Human cervical epithelial carcinoma
HepG2	Human hepatocyte carcinoma
HMEC	Human Mammary epithelial cells
HT1080	Human sarcoma cell line
human CD34+ progenitor cells	Cord blood
IMR-90	Human fœtal lung fibroblasts
Jurkat T Cells	Human immortalized T lymphocytes
KG1a	Human bone marrow myelogenous leukaemia
LNCap	HumanProstate cancer cells
NIH-3T3	Murine embryonic fibroblast
PBMC	Human peripheral blood mononuclear cells
PrEC	Human Prostate epithelial cells
SCLC	Small cell lung cancer
SH-SY5Y	Human neuroblastoma cell line
T lymphocytes	PBMC
T lymphocytes CD4+	PBMC
WI-38	Human lung fibroblasts

LentiBlast Premium outperforms LentiBlast depending on cell lines.

LentiBlast Premium outperforms LentiBlast efficiency depending on cell lines.

BV2 and HEK-293 cell lines were transduced with Lentivirus encoding for GFP at the indicated MOI in presence or not of LentiBlast (LB) and LentiBlast Premium (LBP). After 72 h incubation, % of GFP positive cells (A) and mean intensity (B) of genetically modified cells were evaluated by flow cytometry.

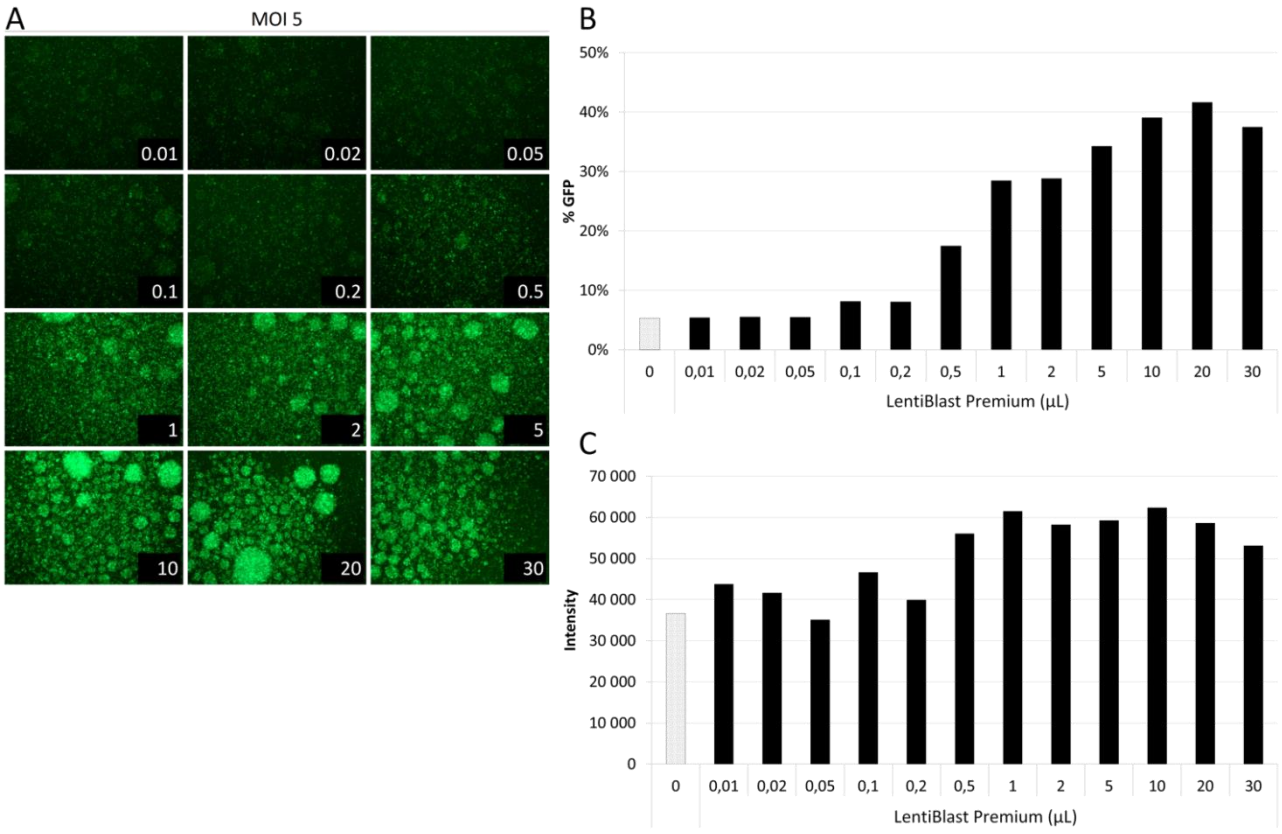


Results demonstrated that depending on the cell type, either the % of transduced cells and/or the overall protein production are increased with LBP compared to LB.

LentiBlast Premium is the best solution for CD34+ stem cells.

LentiBlast Premium was specifically designed for enhancing transduction in CD34+ stem cells (cell lines and primary CD34+) even at low MOI.

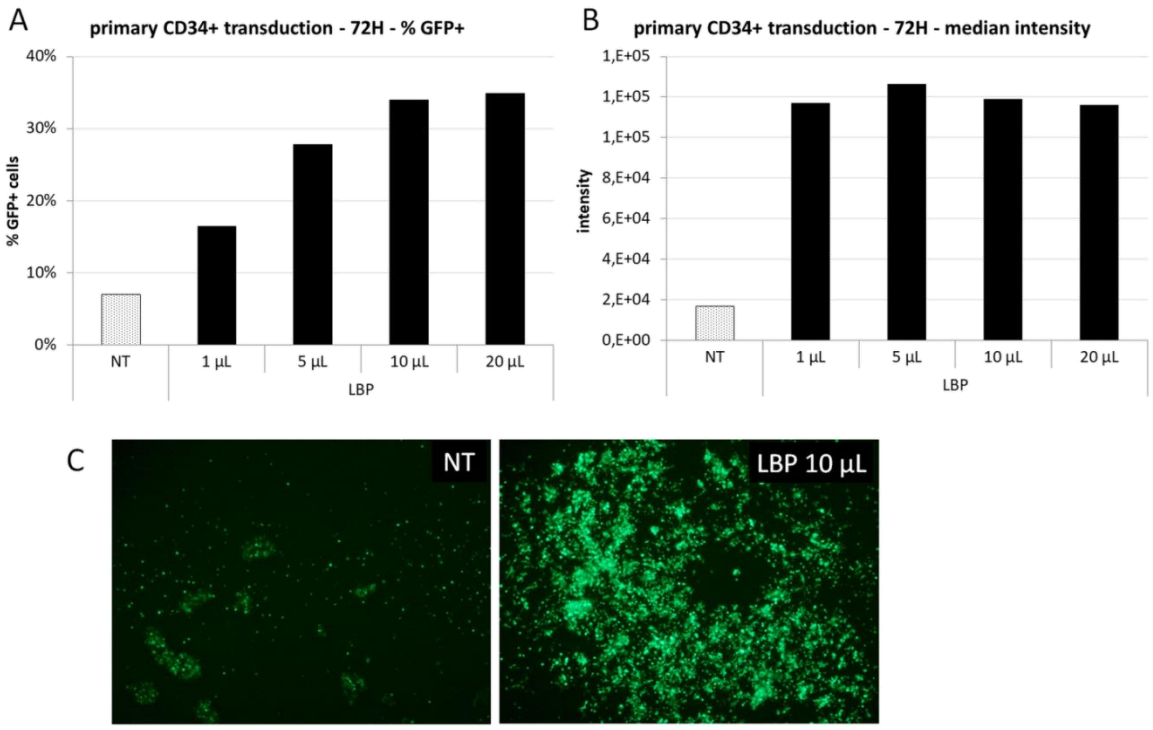
CD34+ stem cell line KG1a was transduced with Lentivirus encoding for GFP at low MOI of 5 in presence or not of increasing volumes of LentiBlast Premium (LBP). After 72 h incubation, transduction efficiency was visualized under fluorescence microscopy (A) and % of GFP positive cells (B) and mean intensity (C) of genetically modified cells were evaluated by flow cytometry.



Results demonstrated that LBP dramatically increase the transduction efficiency of lentiviral particles in KG1a at low MOI.

LentiBlast Premium designed to enhance Lentiviral infection in Stem cells.

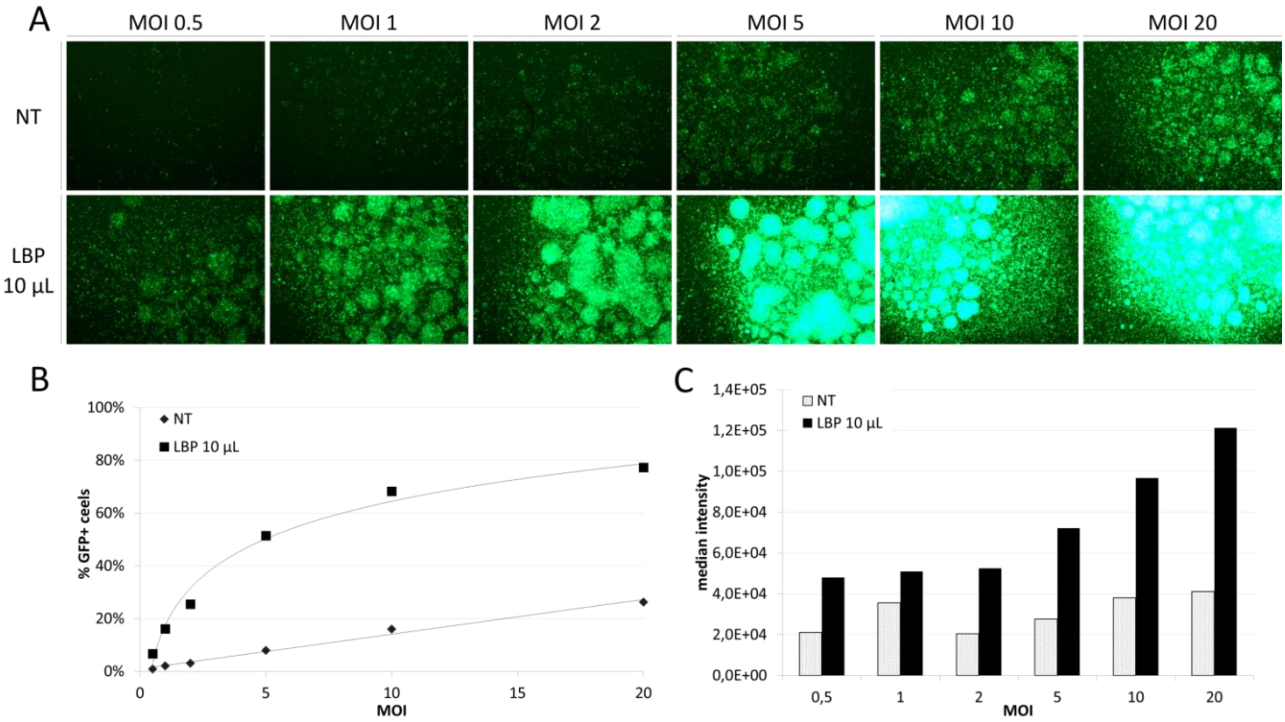
CD34+ stem cell line KG1a was transduced with increasing MOI of Lentivirus encoding for GFP in presence or not of 10 µL of LentiBlast Premium (LBP). After 72 h incubation, transduction efficiency was visualized under fluorescence microscopy (A) and % of GFP positive cells (B) and mean intensity (C) of genetically modified cells were evaluated by flow cytometry.



Results demonstrated that LBP dramatically increase the transduction efficiency of primary CD34+ stem cells low MOI of 5.

LentiBlast Premium designed to enhance Lentiviral infection in Stem cells whatever the MOI used.

CD34+ stem cell line KG1a was transduced with increasing MOI of Lentivirus encoding for GFP in presence or not of 10 µL of LentiBlast Premium (LBP). After 72 h incubation, transduction efficiency was visualized under fluorescence microscopy (A) and % of GFP positive cells (B) and mean intensity (C) of genetically modified cells were evaluated by flow cytometry.

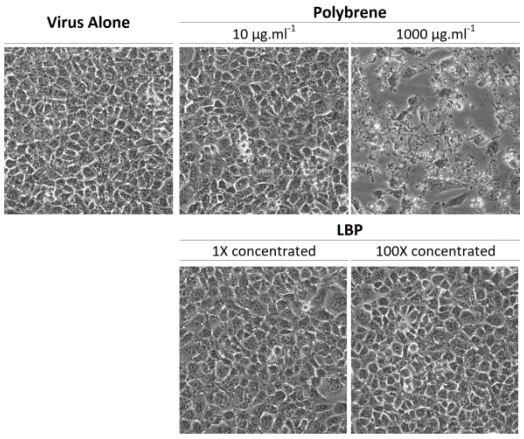


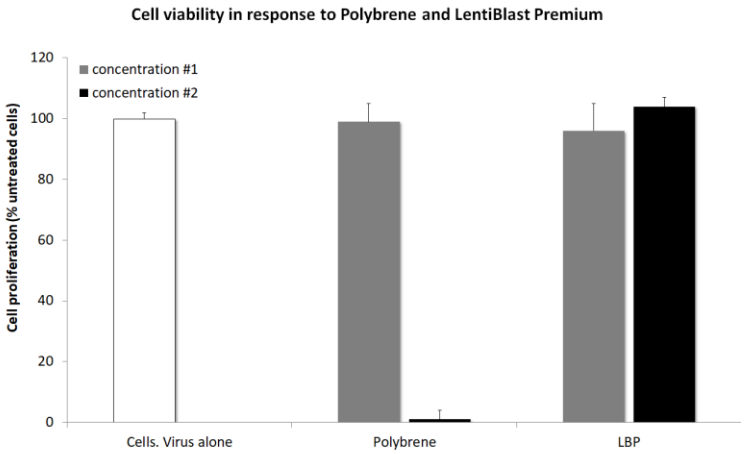
Results demonstrated that LBP dramatically increase the transduction efficiency of CD34+ stem cell line whatever the MOI used.

LentiBlast Premium is non-toxic.

LentiBlast Premium: lentiviral transduction enhancer is non-toxic even at high concentration.

COS-7 cells were infected with a lentivirus in presence or not of enhancers at two concentrations. Polybrene was used at 10 µg/mL and 1000 µg/mL (concentration #1 and #2, respectively) and LentiBlast Premium - LBP was used diluted 1 time or 100 times (concentration #1 and #2 respectively). 72 h after transduction cell viability was visualized under microscopy and percentage of living cells was determined using the MTT Cell Proliferation Assay Kit (OZ Biosciences - Ref # MT01000).





Results show that high concentration of LentiBlast Premium does not affect cell viability, compared to Polybrene.

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