DNA Transfection Reagent for HTS Applications

- Fast and efficient methods to transfect cells for HTS
- Exceptionally reproducible results
- Well-suited for automated approaches
- Compatible with serum and antibiotics
- Reverse, batch & forward protocols available

jetPEI™ transfection reagent is a linear polyethylenimine derivative, free of components of animal origin, providing highly effective and reproducible gene delivery.

jetPEI™ transfection reagent is therefore particularly well suited for automated or manual HTS (High Throughput Screening) with three protocols available: reverse, batch and forward.

Three protocols to suit your application

The reverse protocol is the most appropriate when transfecting a pool of genes, such as a DNA library (Fig. 1). In this protocol, the jetPEI™/DNA complexes are prepared or deposited in the wells prior to addition of the cells. Complexes are stable for up to 4 hours (Fig. 2).

The batch protocol was developed to prepare a homogeneous pool of transfected cells. For this purpose, the cells are transfected just after trypsinization, while still in suspension. This protocol is prefered for drug screening applications and allows rapid processing, one day faster than the forward protocol.

In the forward protocol, the cells are split the day before transfection and the jetPEI™/DNA complexes are added to the adherent cells.

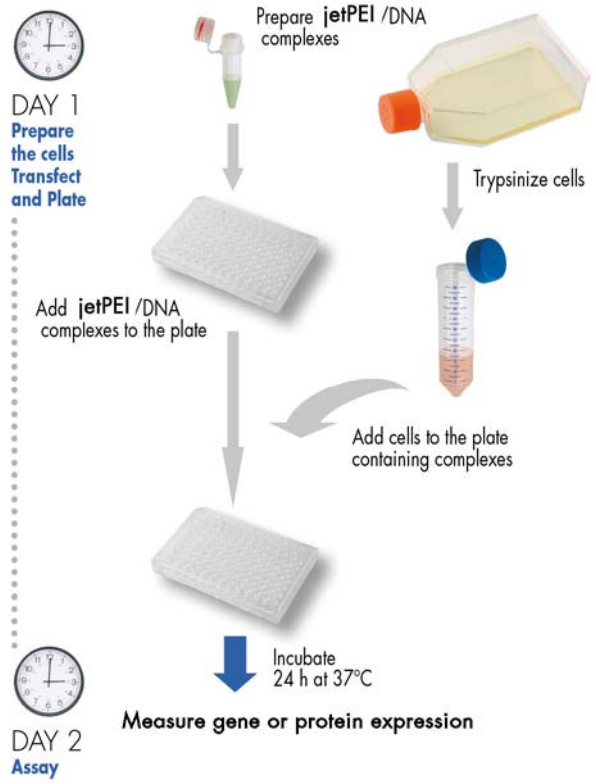

Fig. 1. jetPEI™ reverse protocol for HTS applications.

Robust transfection complexes

Complexes formed with the water-soluble polymer **jetPEI™** and DNA allow efficient transfection for up to 4 hours, in contrast to lipid-based reagents and calcium phosphate. Thus they allow plenty of time to dispense the complexes into the plates (Fig. 2).

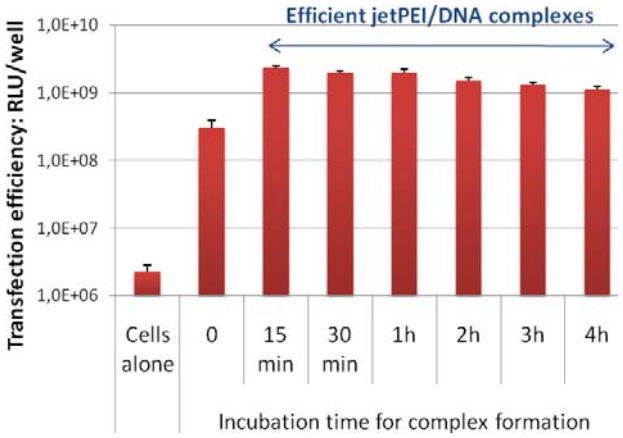

Fig. 2. **Effect of complex formation incubation time on transfection efficiency with jetPEI™.** HEK 293 cells were transfected in 96-well plates with pCMVLuc and jetPEI™ following the reverse transfection protocol. Luciferase activity was measured after 24 h.

Batch-to-batch reproducibility

HTS DNA transfection using **jetPEI™** gives highly consistent transfection efficiency from batch-to-batch (Fig. 3).

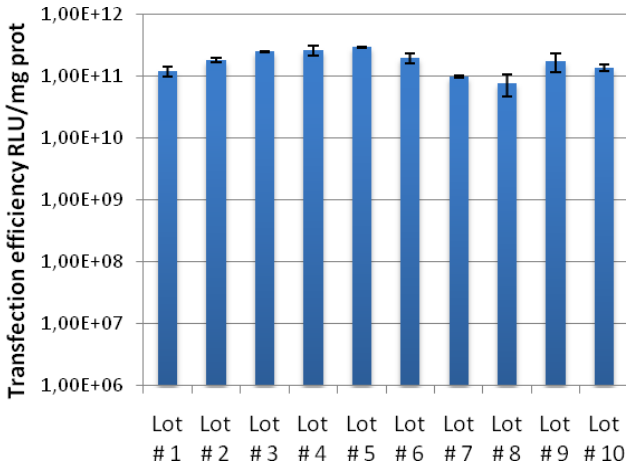

Fig. 3. Batch-to-batch reproducibility using jetPEI™. For each lot, HeLa cells were transfected in triplicate in the presence of serum in triplicate using the standard protocol in 24-well plate.

Efficient in a wide range of cell types

jetPEI™ successfully delivers genes to various adherent and non-adherent cell lines, as well as primary cells (Table 1). Over 400 publications using jetPEI™ can be found in the Product Citation Database on the Polyplus website. In addition, a Cell Transfection Database gives specific transfection conditions for over 400 cell lines and primary cells.

Table 1. Some common cell lines and primary cells successfully transfected using jetPEI™.

3T3-21	COS-1	MCF-7	SK-N-MC
A549	COS-7	MRC-5	SKOV3
B16	CV-1	NIH-3T3	TPH-1VERO
BHK-21	HeLa	PANC-3	Primary hepatocytes
BNL CL.2	HEK293	PC12	Primary human fibroblasts
C2C12	HepG-2	RAW 264.7	Primary keratynocytes
CaCo2	Jurkat	Sf9, Sf21,S2	Primary pre-adipocytes
CHO	K652	SiHa	Primary endothelial cells

Superior transfection results

jetPEI™ was compared to several other popular transfection reagents (Fig. 4). jetPEI™ was found to offer the best performance: high efficiency and low variability (small standard deviation).

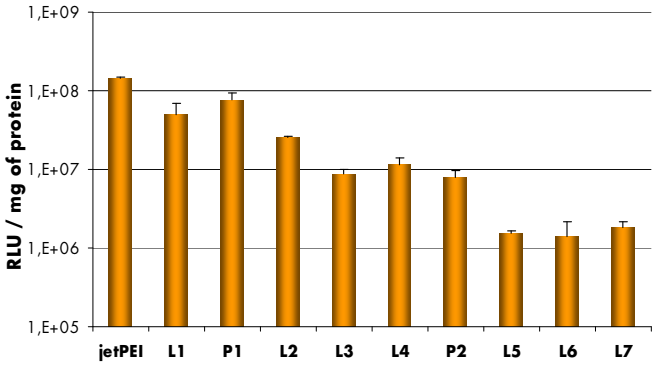

Fig. 4. Transfection efficiency of a series of commercial reagents. HeLa cells were transfected in 24-well plates in the presence of 10% serum, using 1 µg pCMV-luciferase according to the manufacturers' protocols. Luciferase expression was measured 24 h after transfection.

Product	Cat N°	Reagent size	Amount of NaCl sol.*
jetPEI™	101-01N*	0.1 ml	5 ml
	101-10	1 ml	-
	101-10N*	1 ml	50 ml
	101-40	4 x 1 ml	-
	101-40N*	4 x 1 ml	4 x 50 ml
	101B-010	10 ml	-
	101B-010N*	10 ml	2 x 250 ml

**When included, the NaCl complex-formation solution is adapted to proper complex formation, as indicated in the protocol.*

N.B. 1 ml of jetPEI™ is sufficient to perform 1200 to 1600 transfections in 96-well plates.

For additional information contact our technical support at www.polyplus-transfection.com

Polyplus-transfection SA
BIOPARC, Boulevard S. Brant
67401 Illkirch, France
Phone: + 33 (0)3 90 40 61 80
Fax: + 33 (0)3 90 40 61 81

Polyplus-transfection Inc.
1251 Ave of the Americas, 34th fl.
New York, NY 10020, USA
Phone: + 1 508 315 9629

info@polyplus-transfection.com
www.polyplus-transfection.com