

Novagen[®]

NanoJuice[™] Transfection Kit

For use with difficult-to-transfect cell types



Does the same approach work for all of your cell transfection needs?

Not necessarily. And when the clock is ticking, the last thing you need is cells that just won't transfect.

There is no shortage of methods for **introducing plasmid DNA into mammalian cells**: DEAE dextran, calcium phosphate coprecipitation, lipofection, microinjection, electroporation....just to name a few. Unfortunately, these **traditional methods have limitations**, including low transfection efficiency and high cytotoxicity. In addition, many cell types – **primary cell types** in particular – stubbornly resist transfection. It is challenging to find **one transfection reagent that is flexible enough** to work with diverse cell types.

NanoJuice™ Transfection Kit

Ideally, you could use a single transfection kit to optimally transfect a variety of cell types, including the recalcitrant ones. We designed **the NanoJuice™ Transfection Kit** for this purpose.

The **NanoJuice™ Transfection Kit** is designed for efficient transfection of difficult-to-transfect cells, such as primary cells, Saos-2, Caco-2, HUVEC, Jurkat, Raw 264.7, HeLa, and other mammalian cells. The NanoJuice reagent mixture uses the cutting-edge nanotechnology of Priostar® dendrimers along with a proven polycationic liposomal formulation. This combination of NanoJuice Core Transfection Reagent and NanoJuice Transfection Booster allows you to fine-tune transfection conditions for each specific cell type. Complete control over transfection conditions permits you to optimize transfection efficiencies and reduce cytotoxicity.

Kit Features:

- Suitable for stable and transient transfections
- Minimal cellular toxicity
- Compatible with both serum-containing and serum-free media
- Allows flexible reaction conditions to optimize for specific cell types
- Eliminates the need for media changes
- Derived from non-animal sources
- Based on the cutting-edge nanotechnology of Priostar® dendrimers

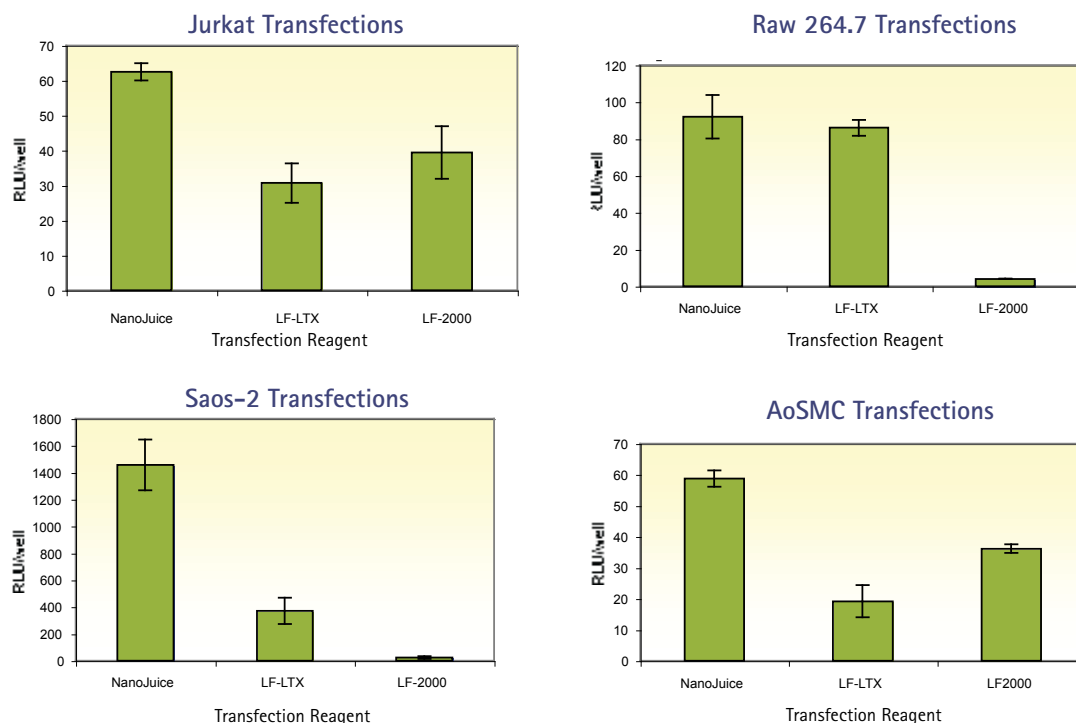
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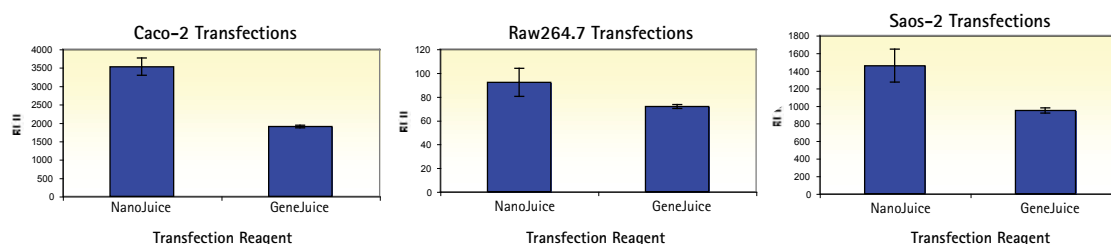
Transfection Efficiencies

Using optimized NanoJuice™ reagent amounts, transfections were performed on Jurkat, Raw264.7, Caco-2, AoSMC, and Saos-2 cells. The cell lines were also transfected using competitors' reagents according to manufacturers' recommended protocols. For cell lines tested, cells transfected using the optimized NanoJuice reagent mixture expressed *Renilla* luciferase to a higher level than cells transfected with competitors' reagents.



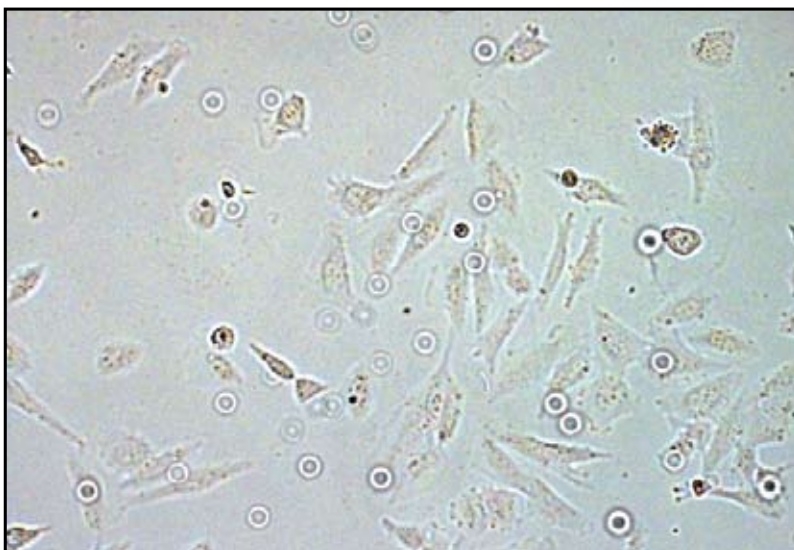
Transfection efficiency with NanoJuice Transfection Kit versus competitor's reagents

The indicated cell lines were plated in 24-well plates 18–24 h prior to transfection, such that cells were 80% confluent at time of transfection. Transfections were performed according to the manufacturers' optimized protocols. For transfection, 0.25 µg of low endotoxin purified pTriEx™-6 RLuc plasmid DNA was complexed with the relevant reagent and introduced into each well. After 24–48 h, the cells were extracted with Reportasol™ Extraction Buffer and RLuc activity was assayed. Data are represented as relative light units per well of 24-well plate (RLU/well). All values reflect an average of three replicate cultures.



Transfection efficiencies of difficult-to-transfect cell lines using NanoJuice Transfection Kit and GeneJuice® Transfection Reagent

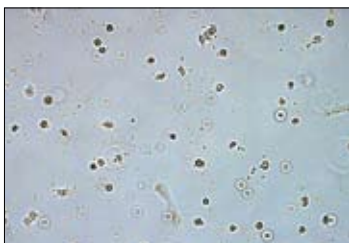
The transfection efficiencies for several cell types were looked at using both Novagen DNA transfection products. The indicated cell lines were plated in 24-well plates 18–24 h prior to transfection, such that the cells were 80% confluent at the time of transfection. The transfections were performed as described in the above figure. All values reflect an average of three replicate cultures.



NanoJuice™

Toxicity Comparison

Three replicate cultures of Saos-2 cells were either left untreated, transfected using a competitor's reagent, or transfected using NanoJuice™ Transfection Kit according to recommended protocols. Cells were photographed 48 h post transfection.



Lipofectamine™ 2000



Lipofectamine LTX



No Transfection

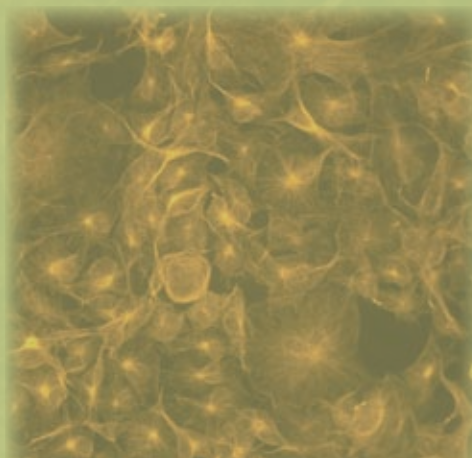
For your routine transfection needs

GeneJuice® Transfection Reagent provides excellent performance in both stable and transient transfections of eukaryotic cells. It is optimized for maximal transfection efficiency, ease of use, and minimal cytotoxicity. GeneJuice Reagent is composed of a nontoxic cellular protein and a small amount of a novel polyamine.

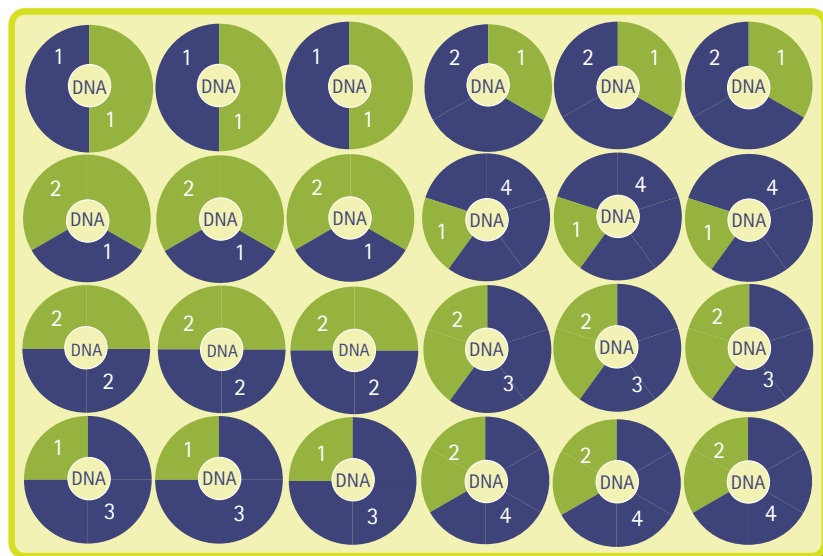
- Highly efficient DNA transfer for both stable and transient transfections
- Minimal cellular toxicity
- Compatible with both serum-containing and serum-free media
- Simple protocol—no need for media changes
- Especially suited for high-throughput transfections in multi-well plate formats for reporter assays

GeneJuice Reagent has been validated for use on a vast and growing range of cell lines. For a complete listing of cell lines successfully transfected with GeneJuice Reagent, cytotoxicity data, protocols, and citation links, visit our Transfection Reagent Resource web page at www.novagen.com/transfection.

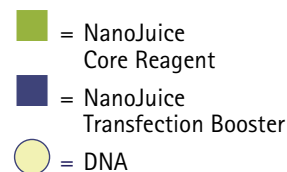
Product	Size	Cat. No.	Price
GeneJuice® Transfection Reagent	0.3 ml	70967-5	
	1 ml	70967-3	
	5 x 1 ml	70967-6	
	10 x 1 ml	70967-4	



Flexible Configuration



The ratios listed in the above plate are given as a reagent: DNA ratio ($\mu\text{l}/\mu\text{g}$) where the amount of DNA is kept constant.



The NanoJuice™ Transfection Kit provides flexibility to fine-tune transfection conditions for efficient DNA delivery. The kit consists of two components: the NanoJuice Core Transfection Reagent and the NanoJuice Transfection Booster. The NanoJuice Transfection Booster is Powered by Priostar® dendrimers. For greater flexibility, including

scale-up, the kit components are available separately in 1-ml sizes.

A simple trial experiment designed for a single 24-well plate uses eight different ratios of the two reagents in triplicate (see diagram above). Select the best core reagent/transfection booster ratio to carry out further transfections.

The NanoJuice Transfection Kit provides enough components to perform 240 transformations in ten 24-well plates or 2400 transformations in one hundred 24-well plates. The NanoJuice Core Transfection Reagent and the NanoJuice Transfection Booster are supplied as ready-to-use sterile solutions.

Validate a new cell type with the NanoJuice™ Kit and get a Sony Portable DVD Player!

For more information and to register your new cell type with Novagen, go to

www.novagen.com/nanojuice

Product	Cat. No.	Size	Price
NanoJuice™ Transfection Kit			
Components	71902-3	240 rxn	
100 µl or 1 ml NanoJuice Core Transfection Reagent	71902-4	2400 rxn	
200 µl or 2 x 1 ml NanoJuice Transfection Booster			
NanoJuice™ Core Transfection Reagent	71900-3	1 ml	
NanoJuice™ Transfection Booster	71901-3	1 ml	

Supporting Products	Cat. No.	Size	Price
G 418 Sulfate, Cell Culture-Tested	345810	250 mg 500 mg 1 g 5 g 25 g	
G 418 Sulfate, Sterile-Filtered Aqueous Solution, Cell Culture-Tested	345812	10 ml 20 ml 50 ml	
Hygromycin B, <i>Streptomyces</i> sp., Sterile-Filtered Solution in PBS, Cell Culture-Tested	400052	5 ml 20 ml 50 ml	
Hygromycin B, <i>Streptomyces</i> sp., Sterile-Filtered Solution in 25mM, HEPES, Cell Culture-Tested	400053	5 ml 20 ml	
Neomycin Sulfate	4801	25 g	
Neomycin Sulfate, γ-Irradiated, Tissue Culture Grade	480100	20 ml	
Streptomycin Sulfate, <i>Streptomyces</i> sp.	5711	100 g	
CytoBuster™ Protein Extraction Reagent	71009-3 71009-4	50 ml 250 ml	
Reportasol™ Extraction Buffer	70909-3 70909-4	25 ml 125 ml	
PhosphoSafe™ Extraction Reagent	71296-3 71296-4	25 ml 125 ml	

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