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Product: *Leopard*[™] Transfection Array v1.0 Individual Polymers

Catalog #: CLI4376-CLI4398



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FOR RESEARCH USE ONLY

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Product Description:

The *Leopard*[™] Transfection Polymers are 23 systematically synthesized poly (β -amino esters) that are included in the *Leopard*[™] Transfection Array v1.0. Each polymer is structurally unique and, as a result, will have different transfection performance in different cell lines. Optimal *Leopard*[™] Transfection Array v1.0 individual polymers are identified by screening using the *Leopard*[™] Transfection Array v1.0 kit (cat. # CLA4404). The *Leopard*[™] Transfection Array v1.0 individual polymers are supplied at a concentration of 20mg/ml in 100% DMSO. The number of transfection assays possible is variable, depending on the optimal P:D ratio for the cell line and scale of transfection (See Table 2).

Contents and Storage conditions:

The *Leopard*[™] Transfection Array v1.0 individual polymers are supplied at a concentration of 20mg/ml in 100% DMSO. Each vial contains 3mls of polymer which provides enough reagent for between 30-8000 transfections. Store at -20°C for up to one year.

Quality Control:

All polymers have been confirmed to be within the specific controlled molecular size range by gel permeation chromatography (GPC) and have been confirmed to bind DNA by agarose gel electrophoresis. Each lot of *Leopard*[™] Transfection Array v1.0 individual polymers are also functionally tested by transfection of HEK293 cells.

Protocols:

1) Optimization of polymer-to-DNA ratio (P:D)

The optimal transfection polymer(s) and near-optimal P:D ratio for a particular cell line is determined by screening the *Leopard*TM Transfection Array v1.0. All Leopard Transfection Array v1.0 Individual Polymers are provided at a stock concentration of 20mg/ml, equivalent to that provided for a 200:1 P:D ration in the Leopard Transfection Array v1.0. Depending on the near-optimal P:D ratio determined during the initial screening, you may need to use a polymer concentration that is different than the one provided (20mg/ml). If this is the case, use Table 1 to determine the proper dilution of the stock *Leopard*TM Transfection Array individual polymer to use in your transfections. If you wish to try to further optimize the P:D ratio, you will need to dilute the polymer accordingly.

Table 1. Use this table to determine the proper dilution of the stock <i>Leopard</i> TM polymer to add to your transfections		
Desired P:D ratio*	[Desired polymer] (mg/ml)	Dilution to prepare**
200:1	20	Use undiluted
100:1	10	1/2
50:1	5	1/4
25:1	2.5	1/8

*Determined from screening the Leopard Transfection Array
** Prepare in DMSO

2) Transfection scale up

Once the specific polymer and the best polymer-to-DNA ratio are determined, use Table 2 to calculate the volumes of polymer, plasmid DNA, serum-free medium based on the scale of your experiment. Also included in the table is the number of transfections that you can expect based on the volume of polymer that is supplied. The *Leopard*TM Transfection Array v1.0 manual includes discussion and transfection protocols (available at www.openbiosystems.com).

Table 2. Suggested amounts of *Leopard*TM Transfection v1.0 individual polymer, plasmid DNA, and media for transfection of adherent cells

Culture Format	Surface area per plate or well (cm ²)	<i>Leopard</i> TM polymer* (μl)	Plasmid DNA** (μl)	Serum free medium*** (μl)	# Transfections			
					200:1 (P:D)	100:1 (P:D)	50:1 (P:D)	25:1 (P:D)
100 mm dish	55	93	186	2480	30	60	120	240
60 mm dish	21	60	120	1600	50	100	200	400
35 mm dish	8	30	60	800	100	200	400	800
6-well plate	9.5	30	60	800	100	200	400	800
12-well plate	3.8	18	36	480	150	300	600	1200
24-well plate	1.9	9	18	240	300	600	1200	2400
96-well plate	0.32	3	6	80	1000	2000	4000	8000

* 100 ng/ml in 25mM Na-phosphate buffer, pH 5.0
 ** At appropriate concentration to achieve the desired final P:D ratio. (See Table 1).
 *** Opti-MEM (Invitrogen)

References

1. Anderson D.G., A. Akinc, N. Hossain, & R. Langer. 2005. Structure/property studies of polymeric gene delivery using a library of poly(beta-amino esters). *Mol Ther.* **11**:426-34.
2. Akinc, A.D. Anderson, D.M. Lynn, & R. Langer. 2003. Synthesis of Poly(β-amino ester)s Optimized for Highly Effective Gene Delivery. *Bioconjugate Chem.* **14**:979-988.
3. Akinc, A. D.M. Lynn, D.G. Anderson, & R. Langer. 2003. Parallel Synthesis and Biophysical Characterization of a Degradable Polymer Library for Gene Delivery. *J. Am. Chem. Soc.* 125:5316-5323.

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Purchaser agrees that it will use the *Leopard*TM Transfection Array v1.0 for research purposes only. No license is granted to the purchaser for commercial use.

Contact and Support

For answers to questions or to suggest improvements or share new applications, feel free to call us at: 888-412-2225, email to info@openbiosystems.com, or visit our website at www.openbiosystems.com