

2006 Transfection Survey

1. Do you perform or plan to perform *in-vitro* or *in-vivo* transfection?

Currently Perform Plan to perform Do not perform or plan to perform

In-vitro

In-vivo

2. Which of the following transfection types do you perform?

Transient transfection only

Stable transfection only

Both transient and stable transfection

3. What is the application of your transfection experiments?

Gene-silencing

Drug discovery

Protein/antibody production

Generation of stable cell lines

Functional studies

Immunohistochemistry (IHC)

Other (please specify)

4. Which of the following transfection methods do you use? (Select all that apply)

Chemical

DEAE-Dextran

Calcium Phosphate

Cationic Lipids (Liposomes)

Cationic Polymers (e.g. PEI (polyethylenimine))

Activated Dendrimers

Lipopolyamines (lipid/polymer moiety)

Magnet-mediated

Non-liposomal Lipids

Physical

Direct Microinjection

Electroporation

Biolistic Particle Delivery

Other

Virus-mediated (please specify)

Adenovirus

Adeno-Associated Virus

Lentivirus

Nucleofection

Other (please specify)

Don't know

5. Which of the following cell types do you use?

Adherent only

Suspension only

Both adherent and suspension

6. How many of your primary and your established cells are adherent cells, how many are suspension cells? (total should each equal 100%)

	Primary	Established
Adherent	____%	____%
Suspension	____%	____%
	100%	100%

7. What are the top companies/suppliers that come to mind when you think of transfection reagents? (Please list as many as you can)

8. Which cell types and species are you using in your transfection experiments? (Select all that apply)

If you do not use a cell type, please leave that row blank.

	Cell line	Please specify names of cell lines	Primary cells	Please specify species and tissue origin
Epithelial-like cells (HeLa, CaCo2, CHO)				
Fibroblast-like cells (HEK 293, Cos-7)				
Endothelial-like cells (HUVEC, BAEC)				
Hepatocyte-like cells (HEPA-1, HepG-2)				
Neuroblastoma (CLBPEC, SHEP)				
Leukemia cells/Lymphoblasts (Jurkat, K562)				
Melanoma				
Myotubes/myoblasts/muscle cells				
Smooth muscle cells				
Keratinocytes				
Monocytes/macrophages				
Granulocytes				
Erythrocytes				
Adult stem cells				
Embryonic stem cells				
Neuronal cells (SH-SY5Y)				
Insect cells (S2, Sf9)				
Bacteria (E.coli, other)				

Parasites (Trypanosoma, Plasmodium)				
Plant protoplasts				
Whole animal				
Other (please specify)				

9. Below are the cell types you selected in the previous question. For each cell type, what type of nucleic acid or protein do you PRIMARILY transfect into the cells?

Only the cell types/animal models chosen in the previous question will appear below.

	Plas mid DNA	Linear DNA	DNA Oligos	RNA Oligos	RNA (i.e. in vitro transcribed, viral)	siRNA duplexes	shRNA vectors	Protein /Antibodies	miRNA	Other
Epithelial-like cells (HeLa, CaCo2, CHO)										
Fibroblast-like cells (HEK 293, Cos-7)										
Endothelial-like cells (HUVEC, BAEC)										
Hepatocyte-like cells (HEPA-1, HepG-2)										
Neuroblastoma (CLBPEC, SHEP)										
Leukemia cells/Lymphoblasts (Jurkat, K562)										
Melanoma										
Myotubes/myoblasts/muscle cells										
Smooth muscle cells										
Keratinocytes										
Monocytes/macrophages										
Granulocytes										
Erythrocytes										
Adult stem cells										
Embryonic stem cells										
Neuronal cells (SH-SY5Y)										
Insect cells (S2, Sf9)										
Bacteria (E.coli, other)										
Parasites (Trypanosoma, Plasmodium)										
Plant protoplasts										
Other (please specify)										

10. The next set of questions refers to the cell types you indicated you use.

For each cell type you selected, which of the following transfection reagent brands and specific products have you tried or currently use?

Only the cell types selected in the previous question will appear

Active Motif	
Amaxa Biosystems	
Ambion	
B-Bridge International	
Bender MedSystems	
Bio-Rad	
CytoStore, Inc.	
GeneChoice	
Genlantis	
IBA GmbH	
Invitrogen	
Invivogen	
Mirus	
MobiTec GmbH	
New England Biolabs (NEB)	
Novagen	
OZ Biosciences	
Polyplus Transfection	
Promega	
Qiagen	
Roche Applied Science	
Stratagene	
Wako Chemicals, USA	
Other (please specify)	

11. Which specific reagents/methods have you tested or currently use?

Only the suppliers selected in the previous question will appear

	Have Tested	Currently Use
Active Motif		
Chariot™		
Amaxa		
HiFect		
Nucleofector Transfection Kits		
Ambion		
siPORT™ XP-1 Transfection Agent		
siPORT™ Amine Transfection Agent		
siPORT™ Lipid Transfection Agent		
siPORT™ NeoFX™ Transfection Agent		
siPORT™ siRNA Electroporation Buffer		
B-Bridge International		
QuickStep Transfection Kit		

SureFECTOR		
UniFECTOR		
SiFECTOR		
Bender MedSystems		
Polyethylenimine-Transferrinfection Kit		
Bio-Rad		
COSFectin™		
HEKFectin™		
TransFectin™		
siLentFect™		
CytoStore, Inc.		
TripleXpress™ TR		
GeneChoice		
Transfectol™ Transfection Reagent		
Genlantis		
GenePORTER Reagent		
GenePORTER 2 Reagent		
PerFectin Reagent		
GeneSilencer Reagent		
NeuroFECT Reagent		
NeuroPORTER Reagent		
BaculoPORTER Reagent		
Cytfectin		
IBA GmbH		
MATra-A Reagent		
MATra-si Reagent		
MATra-S Immobilizer		
MA Lipofection Enhancer		
IBAfect		
Invitrogen		
Lipofectamine™ LTX Transfection Reagent		
FreeStyle™ MAX Transfection Reagent		
Lipofectamine™ RNAiMAX Transfection Reagent		
Lipofectamine™ 2000 Transfection Reagent		
Lipofectamine™ 2000 CD Transfection Reagent		
Oligofectamine™ Transfection Reagent		
293fectin™ Transfection Reagent		
Cellfectin® Transfection Reagent		
DMRIE-C Transfection Reagent		
Lipofectamine™ Transfection Reagent		

Lipofectin® Transfection Reagent		
Optifect™ Transfection Reagent		
InvivoGen		
LyoVec™		
LipoGen™		
Mirus		
TransIT® -Express Transfection Reagent		
TransIT®-LT1 Reagent		
TransIT®-LT2 Reagent		
TransIT®-mRNA Transfection Kit		
TransIT-Oligo Transfection Reagent		
TransIT® In Vivo Gene Delivery System		
TransIT-QR Delivery Solution		
MobiTec GmbH		
GeneTrans II Transfection Reagent		
New England Biolabs (NEB)		
TransPass™ D1 Transfection Reagent		
TransPass™ D2 Transfection Reagent		
TransPass™ R1 Transfection Reagent		
TransPass™ R2 Transfection Reagent		
TransPass™ HeLa Transfection Reagent		
TransPass™ COS/293 Transfection Reagent		
Novagen		
GeneJuice™ Transfection Reagent		
Insect GeneJuice® Transfection Reagent		
RiboJuice™ Transfection Reagent		
ProteJuice™ Transfection Reagent		
OZ Biosciences		
EcoTransfect		
DreamFect™		
Magnetofection™- CombiMag		
Magnetofection™ - ViroMag		
Magnetofection™- SilenceMag		
Magnetofection™ - PolyMag		
FlyFectin™		
Polyplus Transfection		
jetPEI™		
Fecturin™		
<i>in vivo</i> -jetPEI™		
INTERFERin™		

jetSI™		
PULSin™ Protein & Antibody Delivery Reagent		
Promega		
ProFection® Mammalian Transfection System—Calcium Phosphate		
ProFection® Mammalian Transfection System—DEAE-Dextran		
CodeBreaker™ siRNA Transfection Reagent		
Transfectam® Reagent		
Tfx™ Reagents		
TransFast™		
Qiagen		
Effectene™ Transfection Reagent		
PolyFect Transfection Reagent (1 ml)		
SuperFect Transfection Reagent (1.2 ml)		
HiPerFect Transfection Reagent		
RNAiFect Transfection Reagent		
TransMessenger Transfection Reagent		
Roche Applied Science		
FuGENE® 6		
FuGENE® HD		
X-tremeGENE siRNA		
X-tremeGENE Q2		
DOTAP Liposomal Transfection Reagent		
DOSPER Liposomal Transfection Reagent		
Stratagene		
GeneJammer® Transfection Reagent		
LipoTAXI® Transfection Reagent		
SatisFection™ Transfection Reagent		
GeneEraser™ siRNA transfection reagent		
BioTrek™ Protein Delivery Reagent		
MBS Mammalian Transfection Kit		
ViraPack™ Transfection Kit		
Wako Chemicals, USA		
Gene Transfer		

12. Please rank the following transfection reagent features from 1 to 8 in order of importance to your research.

- High transfection efficiency for stable transfections
- High transfection efficiency for transient transfections
- Low cytotoxicity

Transfection can take place in both serum-containing and serum-free media
 Compatible with both serum-containing and serum-free media
 Simple protocol (e.g. no need for media changes or wash steps)
 Effective for difficult to transfect cells
 Minimal off-target effects
 Compatible with a broad range of cell types (adherent and suspension)
 Allows transfection with low amounts of biomolecules
 Complex formation in medium (no need for special buffer or special medium)

13. What plate size do you typically use for transfecting cells?

- 100mmdish
- 60mm dish
- 6-well
- 12-well
- 24well
- 48 well
- 96 well
- 384 well
- Do not use plates
- Other (please specify)

14. Approximately how many transfections do you perform per month?

Transfection is defined by number of wells: transfection in a 12 well plate is 12 transfections, not 1 transfection.

	DNA	RNA	siRNA	Protein/Antibodies	miRNA
1 to 10					
10 to 25					
26 to 50					
51 to 100					
More than 100					
Not applicable					

15. Over the next 12 months, how do you expect the number of transfections you perform to change?

- Increase by x% _____
- Decrease by x% _____
- Stay the same

16. How do you measure transfection efficiency? (Select all that apply)

- Selectable markers
- Fluorescent labeled nucleic acid
- Reporter gene

qRT-PCR or RT-PCR
Arrays
Western blot
Phenotype change
Northern analysis
Other (Please specify)

17. How do you measure cytotoxicity? (Select all that apply)

General Culture observation
Cell proliferation / growth metrics
Apoptosis assays
Cell viability stains (flow-cytometer based)
Cell viability stains (non flow cytometer based)
Total protein assays
Trypan Blue
Other. Please Specify

18. For stable transfections, what selectable marker(s) do you use? (Select all that apply)

Aminoglycoside phosphotransferase
Hygromycin B phosphotransferase
Puromycin Dihydrochloride
Adenomise deaminase
Dihydrofolate reductase
Thymidine kinase
G418
Other (please specify)

19. Assume all commercially available transfection reagents perform equally well in your particular application (i.e. cell line, biomolecule).

Please select the top three factors which would influence you to switch to another supplier's transfection reagent? (Select top 3 and rank)

Availability of samples
Breadth of product offering
Company reputation
Ease of ordering
Price
Product readily available (rarely backorderd)
Superior phone-based technical support
Web-based protocols and application notes
I would not switch

20. Which of the following parameters do you adjust to optimize your transfection experiments? (Select all that apply)

Cell density
Amount of DNA
Transfection reagent to DNA ratio
Incubation period with DNA to reagent complex
Incubation time following transfection
The presence or absence of serum
Other (please specify)

21. The following are different transfection reagent features. Please indicate your preference for each of the choices provided. (choose only one for each choice)

	Strongly Prefer 5	Somewhat Prefer 4	Neutral 3	Somewhat Prefer 2	Strongly Prefer 1	
High transfection efficiency						Low cytotoxicity
Low cytotoxicity						Minimal off-target effects
Minimal off-target effects						High transfection efficiency
High transfection efficiency						Compatible with broad range of cell types
Compatible with broad range of cell types						Low cytotoxicity
Minimal off-target effects						Compatible with broad range of cell types
Low cytotoxicity						Effective for difficult to transfect cells
Effective for difficult to transfect cells						High transfection efficiency

22. Do you currently perform or plan to perform high-throughput transfection?

Currently perform

Plan to perform

 Within 3 months

 Within 3 to 6 months

 Within 6 to 12 months

 In more than 12 months

Do not currently perform or plan to perform

23. Indicate the degree to which you agree with the following statements by checking the appropriate box.

	Disagree	Neither agree or disagree	Agree
I am planning to use more primary cells in my experiments next year			
I spend too much time optimizing transfection conditions			
I must use multiple transfection methods to carry out			

my experiments			
I have to redo experiments due to variability in transfection results			
I do not care what cell type I use for transient protein expression			

24. Are you planning to buy equipment or instruments for transfection?

- Within 3 months
- Within 3-6 months
- Within 6-12 months
- In more than 12 months

25. Please describe any cell and sample type which you have found challenging to transfect with commercially available transfection reagents. (Optional)

Demographic Questions

26. In which type of institution do you work?

- Academic
- Biotechnology
- Pharmaceutical
- Government
- Private Research
- Clinical Diagnostic Testing
- Other (please specify)

27. Which title best applies?

- Professor/Instructor
- Process Engineer
- Business Development Director/Manager
- Research Director/VP of Research
- Department Head
- Technician/Research Assistant
- Account Manager
- Graduate Student
- Staff Scientist
- Principal Investigator
- President/CEO/Owner/VP
- Lab Director/Chief Scientist
- Postdoctoral Fellow
- Procurement Manager
- Consultant
- Other

28. Which of the following are your key areas of research or work?

- Bioinformatics
- Microbiology/Virology
- Immunology
- Genomics/Genetics
- Cell Biology

Diagnostics/Pathology
Drug Discovery
Administration
Biochemistry
Marketing/Sales
Pharmacology/Toxicology
Molecular Biology
Bioengineering
Biomanufacturing / Process Development
Neuroscience
Proteomics
Purchasing
None of the Above
Other (please specify)

29. Which best describes your purchasing authority?

Authorize
Recommend
Evaluate
No Purchase Role