

Lentivirus 5 大主打星



System Biosciences
Accelerating Discoveries in Functional Genomics

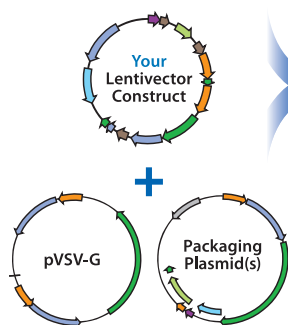
Lentiviral vector- cDNA expression vector

1

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Lentiviral vector - cDNA

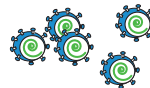
expression vector 可依不同實驗目的選擇，Constitutive system 或 Cumate inducible system。



293TN
Producer Cells



Cell Culture
Medium Containing
Viral Particles



4

Virus Concentration-

PEG-it™ 濃縮病毒顆粒，可濃縮倍數為 10-100 倍。

Concentrate Virus



5

Transduction - TransDux™ 協助病毒轉染試劑，大幅提升 transduction 效率，難感染的細胞也難不倒。

4

Virus Concentration-PEG-it™



騰達行

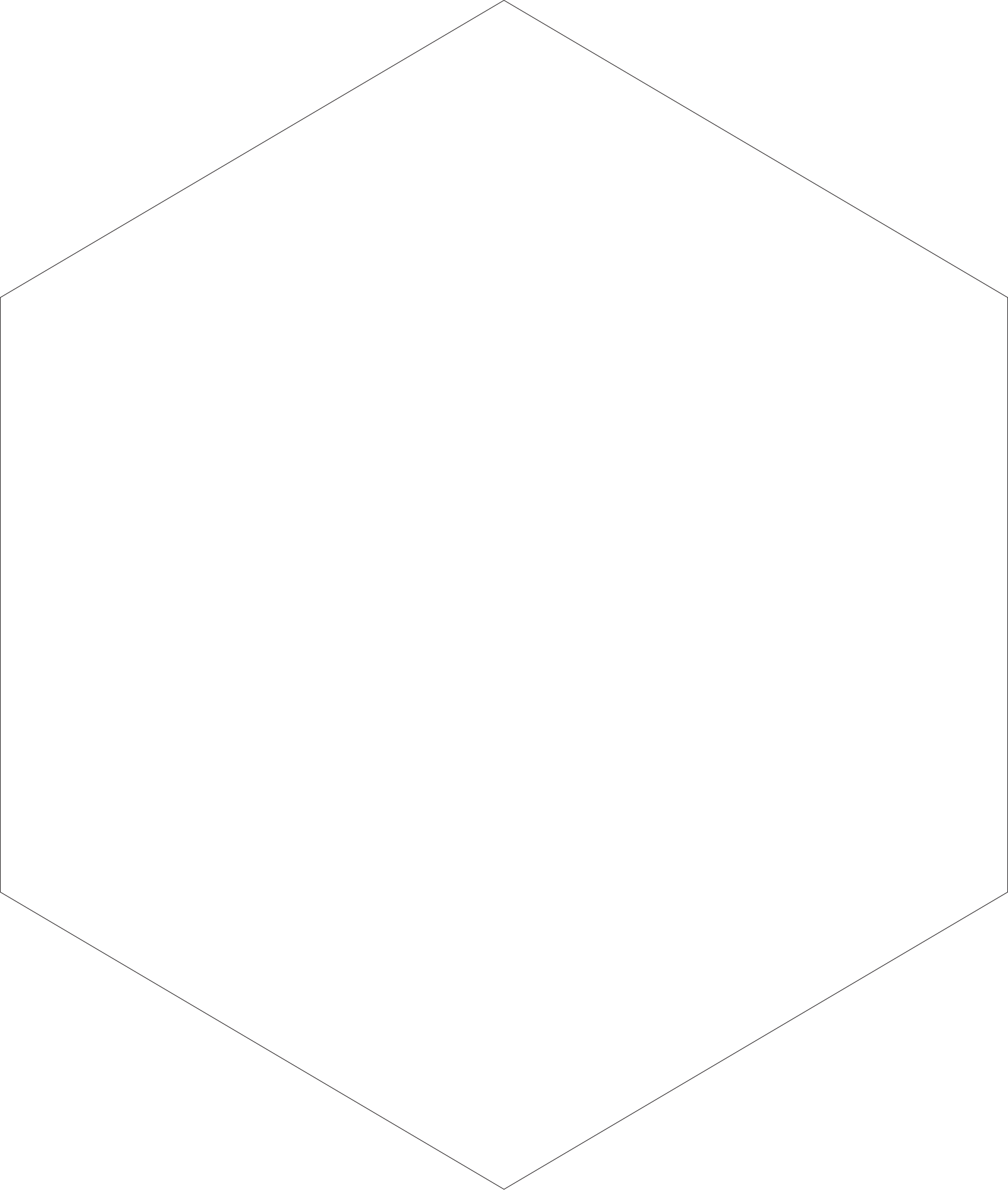
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Transduction-TransDux™

Virus Packaging System-pPACK™ Packing Mix

2



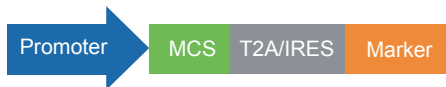
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Lentiviral vector-cDNA expression

- 主要有兩大類，Constitutive system、Cumate inducible system。
- 主要構造：cPPT/CTS * 及 WPRE * 基因，能夠增強病毒感染效率和基因表現。
- Selection marker 豐富，有 GFP, RFP, Puro, Neo 或 Hygro

Constitutive system

Single promoter - 共用一個 **promoter** 表現目標基因 **GOI** * 和 **selection marker**



Double promoter - 一個 **promoter** 表現 **GOI**，另一個 **promoter** 表現 **selection marker**



Bidirectional Promoter - 另用不同方向的 **promoters**，一個表現 **GOI**，另一個表現 **selection marker**



依不同細胞株可選擇不同的 **promoters**：
CMV, MSCV, UbC, PGK 或 **EF1**

Promoter	Expression Level	Applications
CMV	High	Commonly used in most cell lines (HeLa, HEK293, HT1080)
MSCV	High	Hematopoietic and Stem cells
EF1	Medium	Robust in most cell types, primary cells and Stem cells
PGK	Medium	Robust in most cell types, primary cells and Stem cells
UbC	Low	Low and steady in most cell types, primary cells and Stem cells

cPPT/CTS * central polypurine tract/central termination sequence

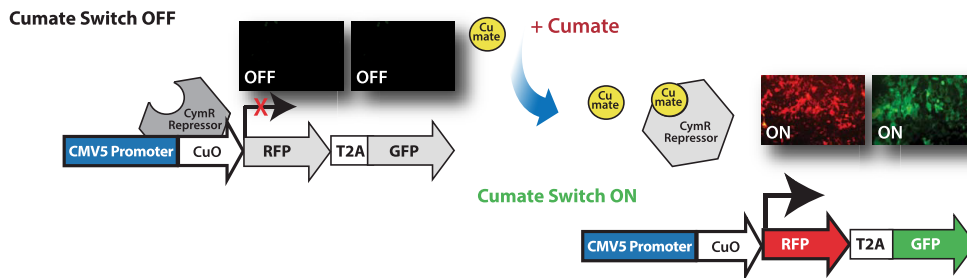
WPRE * woodchuck hepatitis virus post-transcriptional regulatory element

GOI * gene of interest

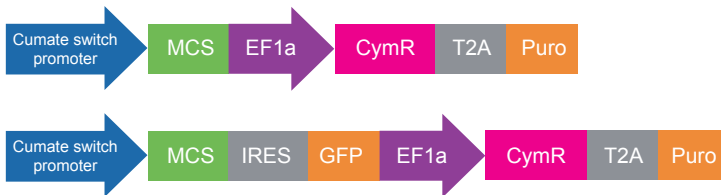
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Cumate inducible system

利用 Cumate 存在與否，控制 CymR repressor 是否與 cumate operator sequences 結合，進而影響 GOI 表現。主要組件：Cumate、表現 CymR 的載體、表現 GOI 的載體。



All-in-one vector- SparQ All-in-one Cumate Switch Vectors，在一個載體裡表現 CymR 又可以調控您的 GOI

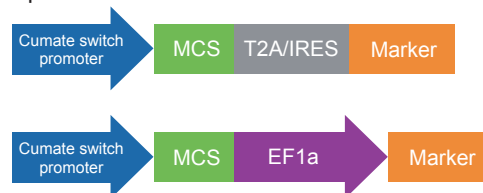


Two vector- CymR Repressors vectors，可以表現 CymR repressor 的載體。SparQ Cumate Inducible Lentivectors，欲調控的基因 (GOI) 載體。

CymR Repressor Vectors



SparQ Cumate Inducible Lentivectors



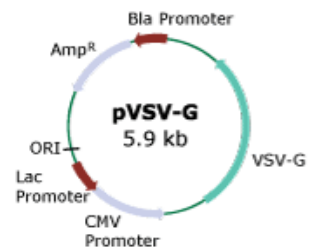
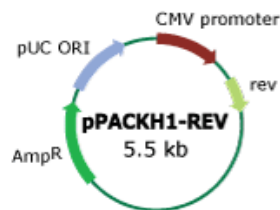
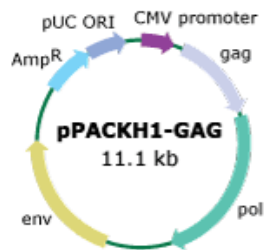
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Packaging System- pPACK™ packaging plasmid mix

- Plasmid mix 包含 *env*、*gag*、*pol* 等構造基因。
- 可以包裹常見的 3rd-generation lentivectors。
- 可生產出來高效價的 pseudoviral particles
- 適用於感染 dividing 和 non-dividing cells。



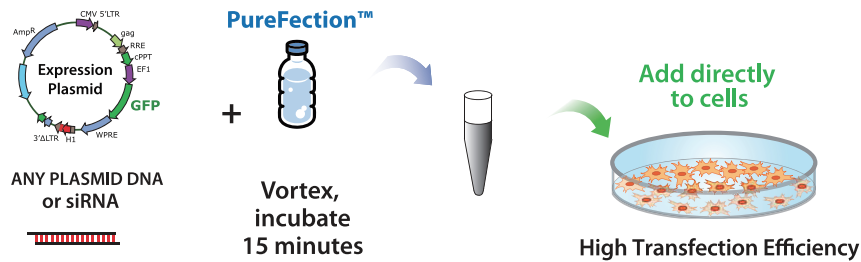
pPACKH1 plasmid mix :



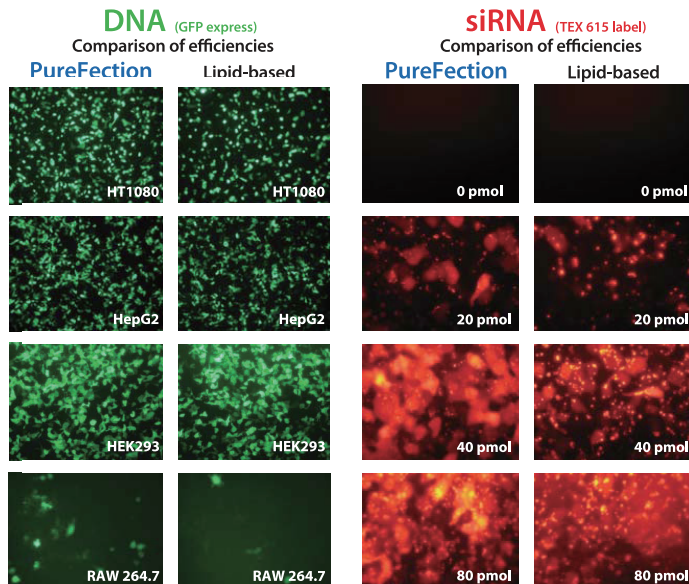
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Transfection reagent-PureFection™

- Nano-based 轉殖試劑，對細胞毒性低，轉殖後不需更換 medium。
- 操作簡單快速，只要 15 min 即可完成。
- 適用於 plasmid 或 siRNA transfection。



PureFection 的毒性比 lipid-based 的方法低，效率一樣好



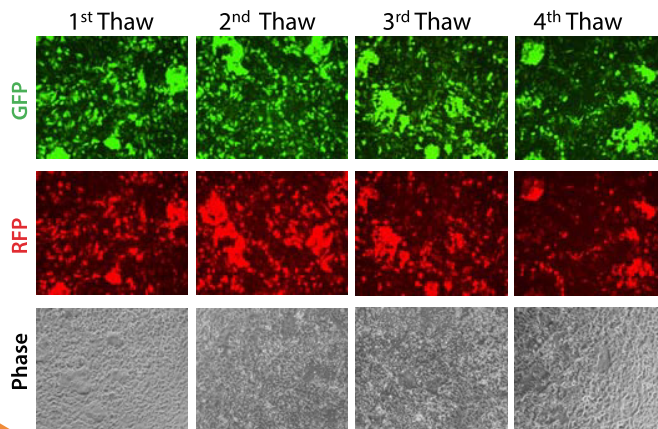
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Virus concentration reagent- PEG-it™

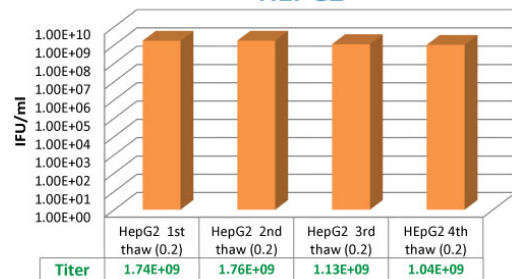
- 不須超高速離心。
- 對細胞沒有毒性，包括 ES cells。
- 可把病毒液濃縮 10-100 倍。
- 對病毒顆粒具有保護力，反覆解凍後仍有感染力。



HepG2 Cells transduced with LV605VA-1 after several freeze-thaw cycles



Infection Titering Data for LV605VA-1 Virus
HEPG2

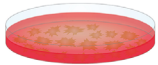


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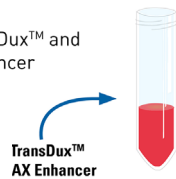
Transduction reagent- TransDux™ & TransDux MAX™

- 提升轉染效率，是一般 polybrene 的 4-8 倍，可應用的細胞廣泛。
- 操作簡單快速。
- 對細胞無毒性，轉染後不需更換 medium。

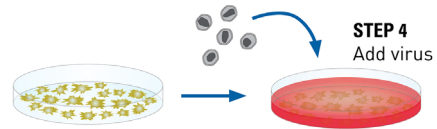
STEP 1
Transfer conditioned medium to a conical tube



STEP 2
Add TransDux™ and MAX Enhancer



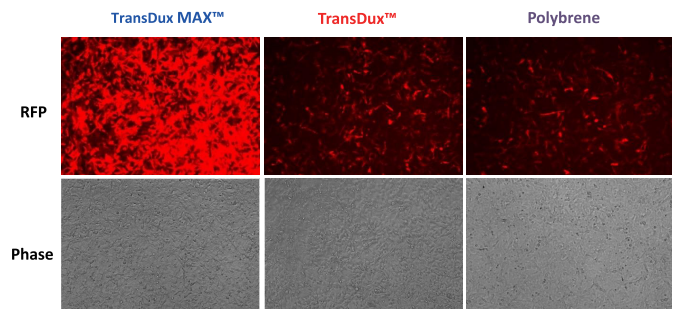
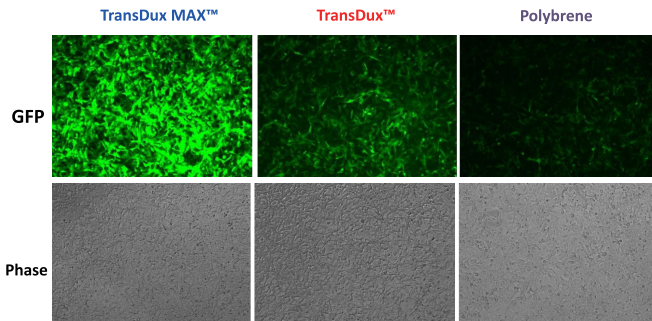
STEP 3
Add conditioned medium with TransDux™ and MAX Enhancer back to cells



STEP 4
Add virus

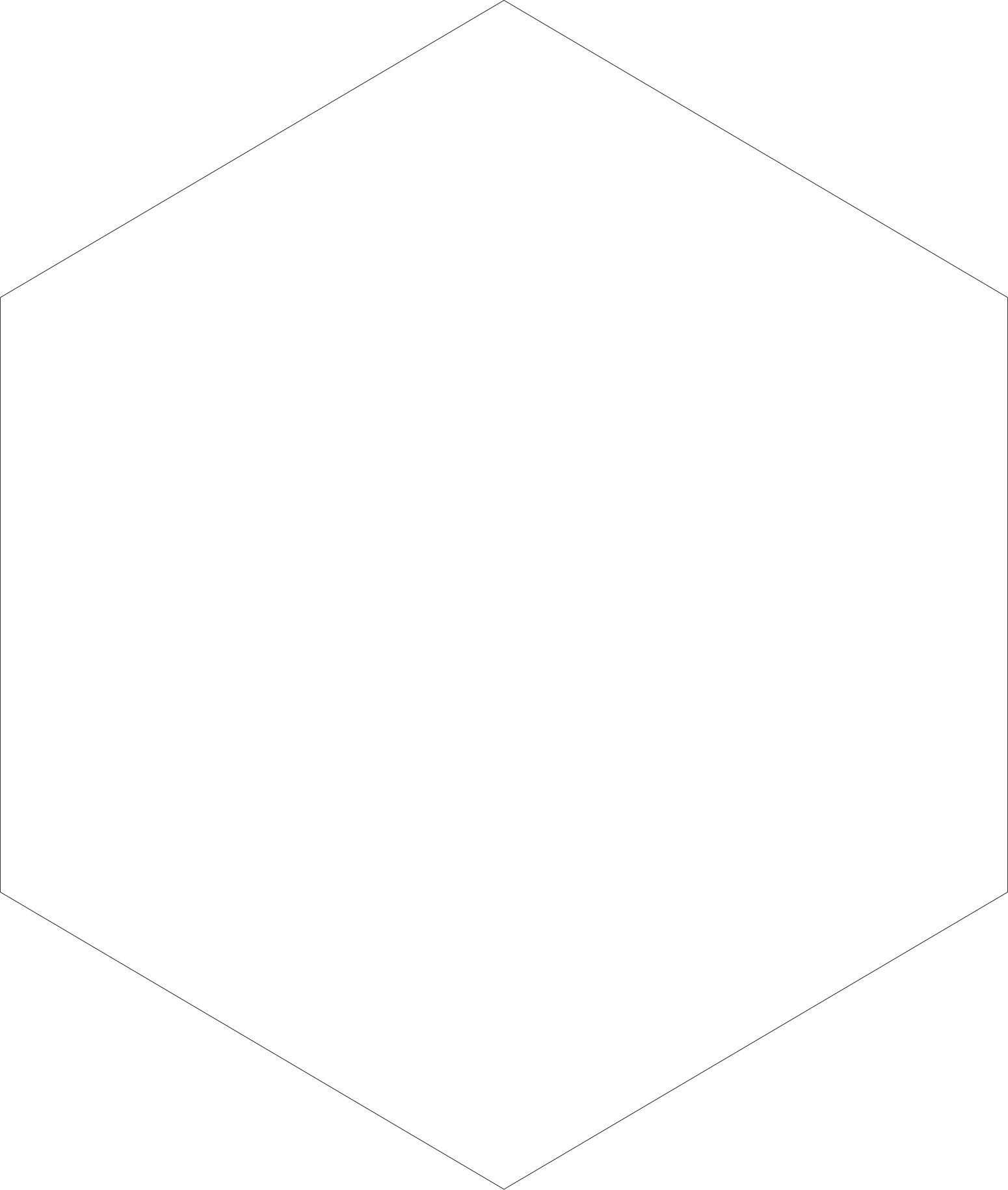
有 TransDux Max™ 的協助，轉染效率更好

Ensure reliable and efficient gene delivery with TransDux MAX™



	品號	品名	包裝
Constitutive system-cDNA expression			
Bidirectional promoter lentivectors	CD810A-1	pCDH-EF1-MCS-(PGK-Puro) Cloning and Expression Vector	10 ug
	CD811A-1	pCDH-EF1-MCS-(PGK-GFP) Cloning and Expression Vector	10 ug
	CD813A-1	pCDH-EF1-MCS-(PGK-GFP-T2A-Puro) Cloning and Expression Vector	10 ug
	CD822A-1	pCDH-EF1-MCS-T2A-RFP (PGK-Puro) Cloning and Expression Vector	10 ug
	CD823A-1	pCDH-EF1-MCS-T2A-GFP (PGK-Puro) Cloning and Expression Vector	10 ug
Single and double promoter lentivectors	CD500B-1	pCDH-CMV-MCS cDNA Cloning and Expression Vector	10 ug
	CD501A-1	pCDH-CMV-MCS2 cDNA Cloning and Expression Vector	10 ug
	CD502A-1	pCDH-EF1-MCS cDNA Cloning and Expression Vector	10 ug
	CD510B-1	pCDH-CMV-MCS-EF1-Puro cDNA Cloning and Expression Vector	10 ug
	CD511B-1	pCDH-CMV-MCS-EF1-copGFP cDNA Cloning and Expression Vector	10 ug
	CD512B-1	pCDH-CMV-MCS-EF1-RFP cDNA Cloning and Expression Vector	10 ug
	CD513B-1	pCDH-CMV-MCS-EF1-GreenPuro cDNA Cloning and Expression Vector	10 ug
	CD514B-1	pCDH-CMV-MCS-EF1-Neo cDNA Cloning and Expression Vector	10 ug
	CD515B-1	pCDH-CMV-MCS-EF1-Hygro cDNA Cloning and Expression Vector	10 ug
	CD516B-2	pCDH-CMV-MCS-EF1-RFP+Puro cDNA Cloning and Expression Vector	10 ug
	CD522A-1	pCDH-MCS-T2A-Puro-MSCV cDNA Cloning and Expression Vector	10 ug
	CD523A-1	pCDH-MCS-T2A-copGFP-MSCV Cloning and Expression Vector	10 ug
	CD524A-1	pCDH-CMV-MCS-T2A-copGFP cDNA Cloning and Expression Vector	10 ug
	CD526A-1	pCDH-EF1-MCS-T2A-copGFP cDNA Cloning and Expression Vector	10 ug
	CD527A-1	pCDH-EF1-MCS-T2A-Puro cDNA Cloning and Expression Vector	10 ug
	CD530A-2	pCDH-EF1-MCS-IRES-GFP cDNA Cloning and Expression Vector	10 ug
	CD531A-2	pCDH-EF1-MCS-IRES-RFP cDNA Cloning and Expression Vector	10 ug
	CD532A-2	pCDH-EF1-MCS-IRES-Puro cDNA Cloning and Expression Vector	10 ug
	CD533A-2	pCDH-EF1-MCS-IRES-Neo cDNA Cloning and Expression Vector	10 ug
	CD550A-1	pCDH-EF1-MCS-BGH-PGK-GFP-T2A-Puro cDNA Cloning and Expression Vector	10 ug
	CD615B-1	pCDH-UbC-MCS-EF1-Hygro cDNA Cloning and Expression Vector	10 ug
	CD630A-1	pCDH-UbC-MCS-IRES-GFP cDNA Cloning and Expression Vector	10 ug
	CD710B-1	pCDH-MSCV-MCS-EF1-Puro cDNA Cloning and Expression Vector	10 ug
	CD711B-1	pCDH-MSCV-MCS-EF1-GFP cDNA Cloning and Expression Vector	10 ug
	CD713B-1	pCDH-MSCV-MCS-EF1-GFP+Puro cDNA Cloning and Expression Vector	10 ug
	CD731B-1	pCDH-MSCV-MCS-IRES-GFP cDNA Cloning and Expression Vector	10 ug
	LV603PA-1	pPS-EF1-GFP-RFP (plasmid)	10 ug
	LV604PA-1	pPS-PGK-GFP-RFP (plasmid)	10 ug
	LV605PA-1	pPS-MSCV-GFP-RFP (plasmid)	10 ug
	LV606PA-1	pPS-UBC-GFP-RFP (plasmid)	10 ug

	品號	品名	包裝
Cumate inducible system			
Cumate	QM100A-1	Cumate solution (1000x)	500 ul
	QM150A-1	Water-soluble Cumate solution (300mg/ml, 10,000x)	500 ul
	PBQM100A-1	Cumate solution (10,000x high concentration)	500 ul
CymR Repressors	QM200PA-2	pCDH-EF1-CymR-T2A-Puro (plasmid)	10 ug
	QM200VA-2	pCDH-EF1-CymR-T2A-Puro (virus)	>1 x 10 ⁶ IFUs
	QM300PA-1	pCDH-EF1-CymR-T2A-RFP (plasmid)	10 ug
	QM300VA-1	pCDH-EF1-CymR-T2A-RFP (virus)	>1 x 10 ⁶ IFUs
	QM400PA-2	pCDH-EF1-CymR-T2A-Neo (plasmid)	10 ug
	QM400VA-2	pCDH-EF1-CymR-T2A-Neo (virus)	>1 x 10 ⁶ IFUs
SparQ Cumate Inducible Lentivectors	QM350PA-1	pCDH-Cuo-RFP-T2A-GFP (positive control plasmid)	10 ug
	QM350VA-1	pCDH-Cuo-RFP-T2A-GFP (positive control virus)	>1 x 10 ⁶ IFUs
	QM500A-1	pCDH-Cuo-MCS empty cloning lentivector	10 ug
	QM511B-1	pCDH-Cuo-MCS-EF1-GFP dual promoter lentivector	10 ug
	QM512B-1	pCDH-Cuo-MCS-EF1-RFP dual promoter lentivector	10 ug
	QM513B-1	pCDH-Cuo-MCS-EF1-GFP+Puro dual promoter and dual marker lentivector	10 ug
	QM516B-2	pCDH-Cuo-MCS-EF1-RFP+Puro dual promoter and dual marker lentivector	10 ug
	QM521A-1	pCDH-Cuo-MCS-T2A-GFP co-inducible T2A lentivector	10 ug
	QM522A-1	pCDH-Cuo-MCS-T2A-RFP co-inducible T2A lentivector	10 ug
	QM530A-2	pCDH-Cuo-MCS-IRES-GFP co-inducible IRES lentivector	10 ug
	QM531A-2	pCDH-Cuo-MCS-IRES-RFP co-inducible IRES lentivector	10 ug
SparQ All-in-one Cumate Switch Vectors	QM800A-1	pCDH-Cuo-MCS-EF1-CymR-T2A-Puro All-in-one inducible lentivector	10 ug
	QM812B-1	pCDH-Cuo-MCS-IRES-GFP-EF1-CymR-T2A-Puro All-in-one inducible IRES lentivector	10 ug
Lentivirus tool			
Lentivirus packaging system	LV500A-1	pPACKH1 HIV Lentivector Packaging Kit	200 ul
	LV510A-1	pPACKH1-XL HIV Lentivector Packaging Kit	500 ul
Transfection reagent	LV750A-1	PureFection Transfection Reagent	1 ml
	LV750A-5	PureFection Transfection reagent	5 ml
Virus concentration reagent	LV810A-1	PEG-it Virus Precipitation Solution (100 mL aliquot)	100 mL
	LV825A-1	PEG-it Virus Precipitation Solution (250 mL aliquot)	250 mL
Transduction reagent	LV850A-1	TransDux virus transduction reagent (200x)	80 reactions
	LV860A-1	TransDux MAX Lentivirus Transduction Enhancer	100 reactions
Combo kit	LV051A-1	LentiStarter 2.0 Kit (includes pPACKH1, PureFection, PEG-it & TransDux)	5 reactions





Lentivirus 5 大主打星



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