Exosomes Factory

提供特殊材料和訊號，就可以製造不一樣的 exosomes

Plasmid Map

Plasmid Map

SBI
System Biosciences
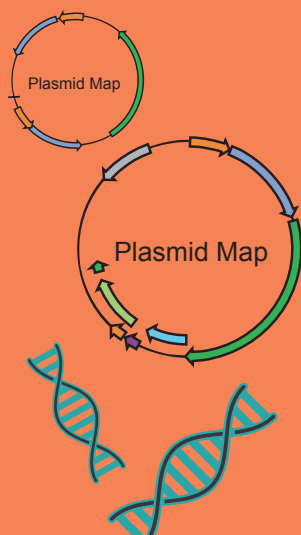
Complete Suite of Tools to Engineer Exosomes

Exo-Glow
Label protein or RNA within exosomes

用螢光標記 **exosomes**，
追蹤 **exosome** 的踪跡

XMIR / AXMIR
Tag sense or antisense miRNA for packaging into exosomes

在 **small RNA oligo** 加上 **XMotif RNA**，製作出帶有特定 **small RNA** 的 **exosomes**

XSTAMP
Target exosomes to specific cell types

製造融合蛋白 - **special ligand + surface protein of exosomes**，
把 **exosome** 送到特定細胞

Exo-Fect
Load exosomes with RNA, protein, or even small molecules

把 **RNA, protein, small molecules** 送進 **exosomes**

XPACK
Tag proteins for packaging into exosomes

在 **cDNA sequence** 加上 **XPack peptide**，製造出帶有特定 **protein** 的 **exosomes**

如何把 miRNAs, proteins, special ligands 包進 exosomes？

1

把 XMIR, XPack 或 XStamp clones 等材料送您的細胞工廠 (例：293T)。

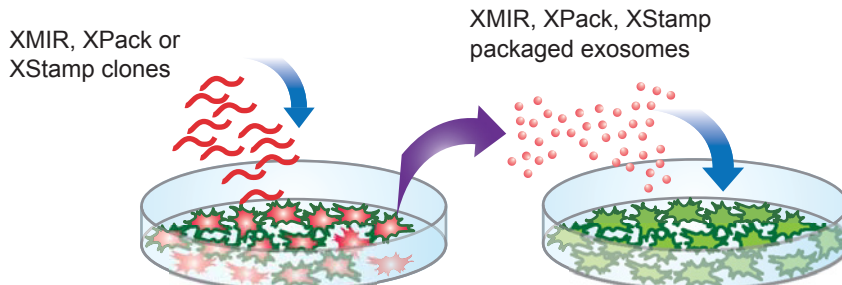**Transfect clones into producer cells**

2

經 過 24 – 48 小 時 後，miRNAs 或 proteins 已 被 包進 exosomes，收集 medium 並搭配 ExoQuick-TC，分離 exosomes。

Harvest packaged exosomes with ExoQuick-TC™

3

把 exosomes 送到目標細胞作用，並觀察後續反應。

Add packaged exosomes to to target cells deliver

XMIR, XPack or XStamp clones

XMIR, XPack, XStamp packaged exosomes

XMIR/AXMIR- Package miRNAs into Exosomes

- 在目標 **small RNA** 加上 **XMotif RNA tag**，確定 **small RNA** 可以被包進 **exosome**。
- 可以包裹的 **small RNA** 包含 miRNAs - **XMIR**, anti-miRNAs - **AXMIR** 。
- 產品形式多樣化 **: RNA oligos, Lentivectors, Viruses**。

XMIR-1 and XMIR-122 packaging into exosomes
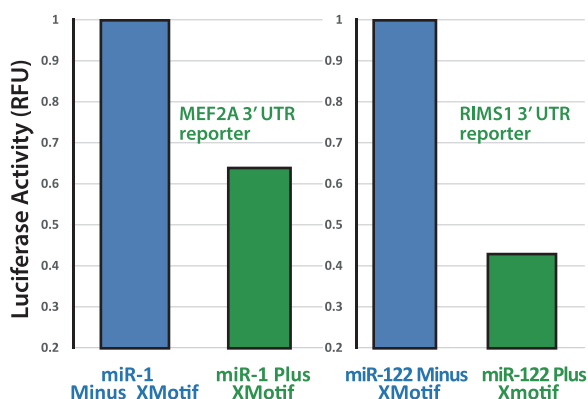
XMotif 可以幫助 miRNAs 包裹進入 exosomes ，而 miRNAs 可以作用至目標基因 3'UTR 抑制 luciferase 表現

The XMIR-1 and XMIR-122 loaded exosomes were added to reporter HEK-293 cells previously transfected with a luciferase gene linked to the 3' UTR for MEF2A, a known miR-1 target, or RIMS1, a known miR-122 target.

XMIR-21 Knockdown of Endogenous PDCD4 Proteins Levels
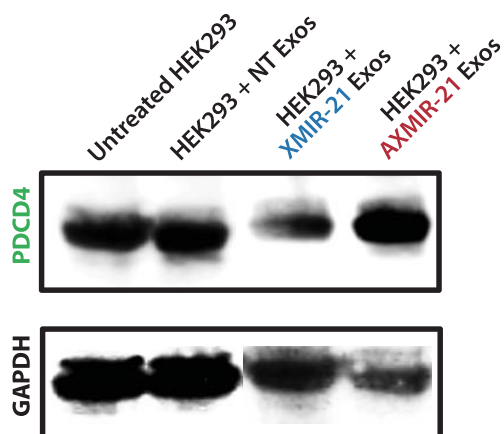
利用 exosomes 攜帶 miR-21，有效的抑制內生性 PDCD4

Exosomes from HEK-293 cells transfected with a miRNA-21 XMIR oligo (XMIR-21) or an anti-miRNA-21 AXMIR oligo (AXMIR-21) were added to naïve HEK-293 cells in culture.

型式	品號	包裝
microRNA oligos	XMIR-XXXX	10 reactions
anti-microRNA oligos	AXMIR-XXXX	10 reactions
Lentivectors	XMIRXP-XXXX	10 µg

XPack™ - Engineer Exosome Protein Cargo

- 在目標蛋白質的 **N** 端加上 **XPack peptide tag**，使目標蛋白質內嵌在 **exosome** 內膜上。
- 任意蛋白質都可以被包進 **exosome**，可以製造出具有 **biotherapeutic exosomes**，或是帶有 **reporter** 可以追蹤 **exosomes**。
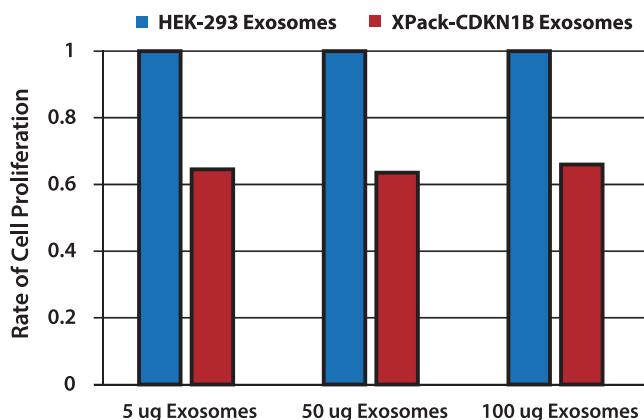- 產品形式多樣化 : **Lentivectors, Viruses, Cell lines**。

XPack-GFP Exosome Packing

XPack-GFP localization pattern during packing
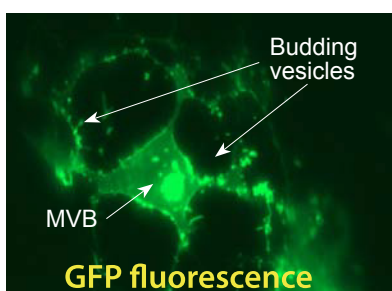
XPack peptide 可 以 幫 助 GFP 嵌入 exosomes，利用 GFP 追蹤 exosomes 去向

XPack-CDKN1B Exosome Loading and Delivery

Cyclin-dependent kinase inhibitor 1B (CDKN1B) 主要作用為負調控細胞周期，利用 exosomes 攜 帶 CDKN1B，目標細胞增殖率下降

An XPack fusion to CDKN1B was generated in the XPack Cloning vector (cat# XPAK510PA-1) and transfected into HEK-293 cells. The rate of cell proliferation in these recipient cells was quantified using an MTT Assay.

型式	品號	包裝
Lentivector	XPAKXXXPA-1	10ug
Virus	XPAKXXXVA-1	>1 x 10^6 IFUs
Cell line	XPAKXXXCL-1	2 x 106 cells

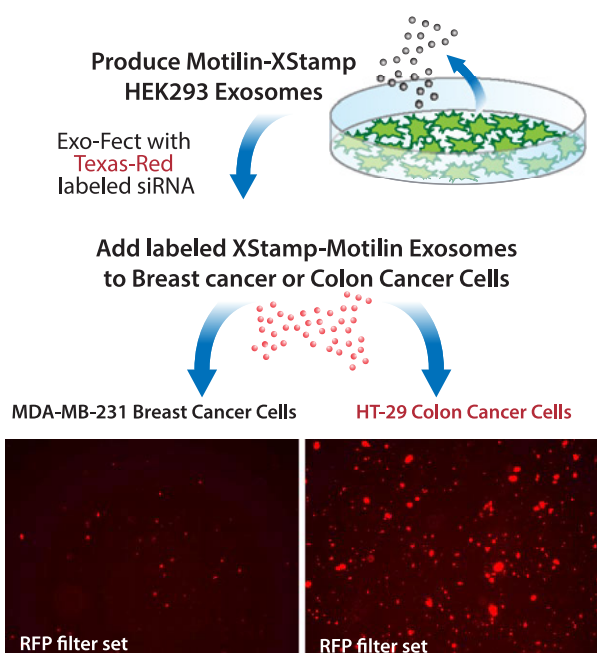# XStamp™ - Program Exosomes with Specific Addresses

- 在 **target ligand** 加上 **XStamp domain (C1C2 domain from MFG-E8)**，使此 **fusion protein** 可以嵌在 **exosome** 的表面。
- **Exosomes** 可以準確的被擁有特定受體的細胞吸收。
- 產品形式： **Lentivectors**，可以建立 **stable cell line**。

MFG-E8 Localizes to Exosome Surfaces (C1C2 domain)
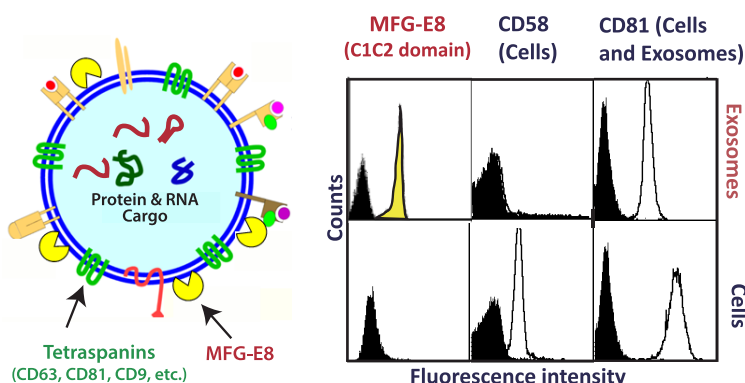
MFG-E8 為 exosome 的 表 面 蛋 白，Fusion protein 會 因 MFG-E8 正確的卡在 exosome 表面

Motilin-XStamp for GI tract targeting

Produce Motilin-XStamp
HEK293 Exosomes

Exo-Fect with
Texas-Red
labeled siRNA

Add labeled XStamp-Motilin Exosomes
to Breast cancer or Colon Cancer Cells

MDA-MB-231 Breast Cancer Cells   HT-29 Colon Cancer Cells

Motilin 為小腸組織中的 M 細胞分泌促進腸道活動，帶有 motilin 的 exosomes，只會被腸道細胞吸收

RFP filter set   RFP filter set

Motilin-XStamp construct was transfected into HEK293 cells and the XStamp-Motilin exosomes were Exo-Fected with a Texas-Red-labeled siRNA to monitor exosome docking and delivery.
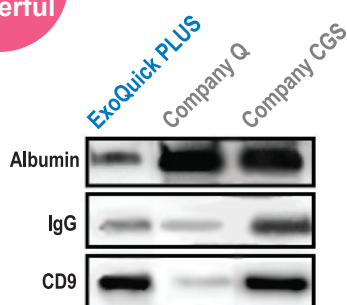
型式	品號	包裝
Lentivector	XSTPXXXPA-1	10 ug

ExoQuick® PLUS & ExoQuick-TC® PLUS

- 操作簡單快速。
- 透過 **microspheres beads**，減少 **non-exosomal proteins** 干擾。
- 靈敏度增加，讓 **Exosome biomarker** 偵測更容易。
- 得到的 **exosomes** 可應用於 **Mass spectrometry, Western blotting, Exosome labeling, in vivo/ex vivo exosome delivery**。
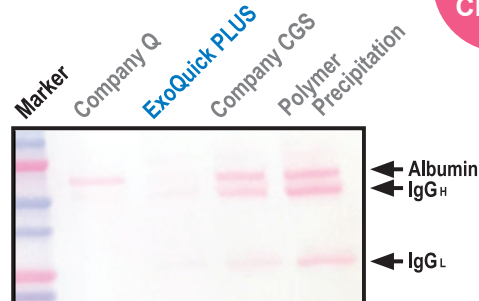
Exosome biomarker (CD9)
靈敏度增加 3 倍 !!
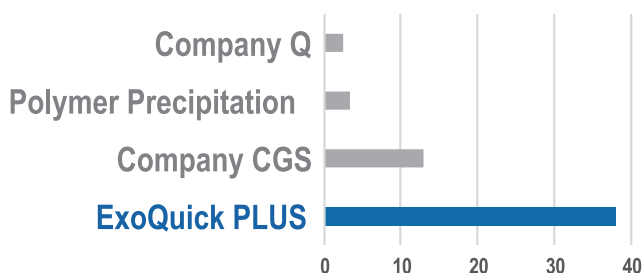
Powerful

non-exosomal proteins
減少 85%

Cleaner

ExoQuick PLUS exosome isolation results in samples with less protein carry-over than competitors'products.

Particles
protein ratio 最高

Better

Particles/μg of protein(×10^6)

Exosome isolation from serum with ExoQuick PLUS results in a higher particle:protein ratio than competitors' products, indicating less protein carry-over.

品號	品名	包裝	應用
EQPL10A-1	ExoQuick PLUS Exosome Purification Kit	10 reactions	serum, plasma
EQPL10TC-1	ExoQuick-TC PLUS Exosome Purification Kit	10 reactions	tissue culture media

Exosomes 相關產品

應用	品號	品名	包裝
Isolation		**ExoQuick Family of Reagents**	
	EXOQ5/20A-1	ExoQuick serum exosome precipitation solution	5/20 ml
	EXOQ5TM-1	ExoQuick Plasma prep and Exosome precipitation kit	75 reactions
	EXOTC10/50A-1	ExoQuick-TC for Tissue Culture Media and Urine	10/50 ml
	EXOLP5A-1	ExoQuick-LP Lipoprotein Pre-Clear & Exosome Precipitation Kit	5 reactions
	EXOCG50A-1	ExoQuick-CG cGMP-grade Exosome Isolation reagent	30 reactions
Purification		**Exo-Flow96 and 32 Exosome IP Kits**	
	EXOFLOW32/96A-CD9	Exo-Flow32/96 CD9 IP kit	32/96 reactions
	EXOFLOW32/96A-CD63	Exo-Flow32/96 CD63 IP kit	32/96 reactions
	EXOFLOW32/96A-CD81	Exo-Flow32/96 CD81 IP kit	32/96 reactions
	EXOFLOWMAG-1	Exo-FlowMag96 96 well magnetic plate	1 Kit
		Exo-Flow Exosome FACS Kits	
	EXOFLOWXXXA-1	Exo-Flow capture kit	10 reactions
	CSFLOWBASICA-1	Basic Exo-Flow kit without any coupled antibodies	100 reactions
Detect		**Exosome Antibodies and Antibody Arrays**	
	EXOAB-KIT-1	ExoAb Antibody Kit (CD9, CD63, CD81, Hsp70 antibodies)	25 µl each
	EXOAB-XXXXX-1	Anti-XXXX Antibody	25 µl
	EXORAY-4/8/12	Exo-Check Exosome Antibody Array	4/8/12 Arrays
Quantitation		**ELISA, EXOCET**	
	EXOCET96A-1	EXOCET Exosome Quantitation Kit	96 reactions
	FCET96A-1	FluoroCet Exosome Quantitation Kit	96 reactions
	EXEL-ULTRA-CD63-1	ExoELISA-ULTRA Complete Kit	96 reactions
	EXOEL-XXXXA-1	Exosome ELISA Complete Kit	96 reactions
Discovery		**SeraMir Exosome RNA Amplification and Profiling**	
	RA-XXXA/TC-1	SeraMir Exosome RNA Amplification kit	10/20 reactions
		Exosome RNA-Seq and Mass Spec Kits	
	XPEP100A-1	XPEP Exosome Mass Spec sample prep kit	8 reactions
	XRNA101A-1	XRNA Exosome RNA-Seq NGS library prep kit (Index set 1-8)	8 reactions
	XRNA102A-1	XRNA Exosome RNA-Seq NGS library prep kit (Index set 9-16)	8 reactions
Engineering		**Labeling, Delivery and Targeting kit**	
	EXFT10/20A-1	Exo-Fect Exosome Transfection Kit	10/20 reactions
	EXOR/GXXXA-1	Exo-Red/Green exosome RNA fluorescent label	20 rxns
	XMIR-XXXX	XMIR-XXXX RNA oligo	10 reactions
	AXMIR-XXXX	AXMIR-XXXX RNA oligo	10 reactions
	XMIRXP-XXXX	XMIRXpress Lentivector	10 µg
	XPAKXXXPA-1	Xpack Lentivector	10µg
	XPAKXXXVA-1	Xpack Lentivirus	>1 x 10^6 IFUs
	XPAKXXXCL-1	XPACK- XXXX Stable HEK293 Producer Cell Line	2 x 10^6 cells
	XSTPXXXPA-1	XStamp lentivector	10 µg

更多更詳盡的產品資訊

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0800-211-819

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