



## See more with Raybiotech in Stem cell 如何利用Antibody array 進行幹細胞研究主題??

廖珮鑾 撰

2010年，美國心臟學會發表了一篇利用基因工程改造Mesenchymal stem cells (MSCs)，增加受傷心肌中的CCR1蛋白表現量，提高了細胞存活率的相關文獻；

Jing Huang 等科學家，利用小鼠模式，藉由 Mouse Cytokine Antibody Array (Raybiotech, Inc.) 發現了 Granulocyte colony-stimulating factor (G-CSF) 表現量出現差異，證實了MSCs會從骨髓外移，提供心肌梗塞 (Myocardial Infarction, MI) 後，保護心肌的功能 (註1)。

在幹細胞研究中，了解幹細胞的調控機制，一直是科學家努力的目標；除了針對特定的基因 (如OCT4、SOX2) 進行研究外，要如何在具有功能的眾多蛋白質中 (如Cytokine) 找到關鍵性主角，再度開創生醫、再生醫學領域新格局?!

### 您的關鍵首選: Antibody array!!

Antibody array 是一種將多種抗體點陣在各種載體上，利用Sandwich ELISA原理搭配專一性極高的抗體規格，同時進行免疫酵素反應，完成單一樣品對多種特定蛋白的高靈敏偵測方法。

由Raybiotech 公司所生產的Antibody array，透過嚴苛的抗體篩選技術，完全避開抗體之間交叉作用 (cross talk)，並將靈敏度達到最高! 除此之外，也提供您在實驗當中，最重要的數據再現性。在實驗方法上，與傳統的盤式ELISA分析相比，使用Antibody array，無需耗費大量珍貴的檢體，即可同時檢測多種target protein，大大降低樣品耗損與分析成本。

在茫茫蛋白質海當中，您的下個目標在哪? 首先，您可以透過涵蓋超過507種人類蛋白質種類的Antibody array (產品編號 #AAH-BLG-1)，進行初步的篩選，搜尋相關的、具有差異性的蛋白質；接著，根據得到的候選蛋白質，縮小分析的範圍，再利用定量型的Antibody array (如產品編號 #QAH-CAA-6000 可同時定量分析280種人類蛋白質抗體，#QAH-INF-3 則可同時定量分析40種與人類發炎 (Inflammation) 相關的Cytokines)，逐一進行驗證，得到最終量化的數據。

Antibody array 能應用在多種領域，不論探討的是幹細胞研究、心血管疾病相關(Angiogenesis)、發炎反應(Inflammation)、新陳代謝 (Adipokine)、細胞凋亡(Apoptosis)等，都可利用此技術進一步進行分析與探討。在科學技術突飛猛進的時代，使用Raybiotech的Antibody array，您可千萬不要錯過! 更多Raybiotech 相關訊息，請前往岑祥網站。

註1: Huang J, Zhang Z, Guo J, Ni A, Deb A, *et al.* (2010) Genetic modification of mesenchymal stem cells overexpressing CCR1 increases cell viability, migration, engraftment, and capillary density in the injured myocardium. *Circ Res* 106: 1753–1762.



## 高品質控管

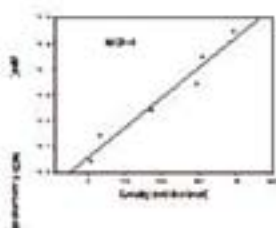
Specificity and sensitivity are two major concerns for designing protein arrays using antibodies as capture and detection reagents. At RayBiotech, we only select antibodies with the highest specificity and affinity in our array system. All antibodies used in our system are rigidly tested and must meet our superior standards. Examples below show the highest standard of array systems.

## 高專一性



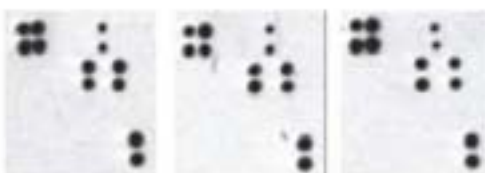
A recombinant protein IL-8 was incubated with an array membrane spotted with 82 capture antibodies. The signal was only detected in the IL-8 antibody spot. All antibodies in the system are tested in this way.

## 高靈敏度



Cytokines are detected with very high sensitivity using the array format. Cytokine Antibody Array membranes were incubated with different concentrations of MCP-1. The intensities of the signals were measured by densitometry and plotted against the concentrations of MCP-1.

## 高實驗再現性



High reproducibility is important in experimentation. The human Cytokine Antibody Array system I was probed with a conditioned medium. Three membranes showed similar signal intensities.

## 可與ELISA匹敵

Comparison of cytokine levels by cytokine antibody arrays and ELISA

		Fold change (before and after stimulation)	Fold change (change between two patients)
IL-8	Cytokine antibody array	37.8	1.3
	ELISA	34.8	1.3
IRF1	Cytokine antibody array	1.0	1.0
	ELISA	1.0	1.3
MCP1	Cytokine antibody array	2.5	17.8
	ELISA	2.0	22.2

The relative expression levels in protein arrays were determined by densitometry. The actual amounts of protein levels were quantified by ELISA. Fold change represents cytokines differentially expressed between TNF alpha treated and untreated conditioned media (U251 cells), and between patient sera.

## 經各大期刊採用

Hundreds of publications in journals like Nature, Nature Medicine, cell, PNAS, JBC and Lancet.



現在訂購Raybiotech 產品，通通優惠價!!

Product #	Description	Pkg. Size	優惠價
AAH-ANG-1-4	RayBio® Human Angiogenesis Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 20 Angiogenic Factors in 4 samples. Suitable for all sample types	4 membrane arrays	29,700
AAH-APO-1-4	RayBio® Human Apoptosis Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 43 Apoptotic markers in cell and tissue Lysates (4 samples).	4 membrane arrays	36,700
AAH-CHE-1-4	RayBio® Human Chemokine Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 38 chemokines in 4 samples. Suitable for all sample types	4 membrane arrays	40,300
AAH-CYT-1-4	RayBio® Human Cytokine Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 23 Cytokines in 4 samples. Suitable for all sample types	4 membrane arrays	26,400
AAH-GF-1-4	RayBio® Human Growth Factor Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 41 Growth Factors in 4 samples. Suitable for all sample types.	4 membrane arrays	44,550
AAH-INF-1-4	RayBio® Human Inflammation Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 20 Inflammatory Factors in 4 samples. Suitable for all sample types.	4 membrane arrays	29,700
AAH-ADI-1-4	RayBio® Human Obesity Antibody Array 1 (4 membrane arrays) with Accessories, for simultaneous detection of 62 Human Adipokines in 4 samples. Suitable for all sample types	4 membrane arrays	56,100
AAH-BLG-1-2	L Series 507: RayBio® Label-based Antibody Array I (1 glass chip per kit, 2 sub-arrays per chip), for simultaneous detection of 507 Human proteins in 2 samples. Recommended for use with serum, plasma and cell-cultured media. Compatible with many bodily fluids. Not generally recommended for cell or tissue Lysates.	1 Glass chip with 2 sub-arrays	51,000
QAH-INF-3-1	Quantibody® Human Inflammation Array 3, multiplex ELISA array Kit for quantitative measurement of 40 Cytokines in 8-10 samples. Suitable for all sample Types	1 Glass chip; 16 sub-arrays	112,000

\*除了適用Human以外，Rat、Mouse 也有相對應的產品；欲知更多訊息，請直接來電洽詢!!