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• 計畫英文名稱	Studies of Differential Protein Expression and Glycosylation Associated with Endometriosis
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• 研究人員	楊維中; 曾啓瑞; 王惠鈞 Yang, Wei-Chung; Tzeng, Chii-Ruey; Wang, H. J. Andrew
• 中文關鍵字	細胞外質; 子宮內膜異位症; 醣化作用
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• 中文摘要	胚胎著床牽涉胚胎與子宮內膜細胞的黏合作用，其上皮細胞及內皮細胞及其所分泌細胞外質 (extracellular matrix, ECM)的成份及功能，扮演進行胚胎著床時重要的決定因素。而子宮內膜異位症 (endometriosis)是由於子宮內膜組織因不明原因附著於不適當的位置，導致胚胎著床不易，增加流產的機率，造成不孕。 全世界有 3%-5%的 婦女患有子宮內膜異位，在台灣，平均每四位上不孕症專科求診的婦女病患即有一位患有子宮內膜異位症。病變的子宮內膜組織具類似惡性腫瘤的性質，可轉移、滲透、侵犯及附著於周邊的器官及組織。這些作用必須透過破壞包覆於細胞周圍的細胞外質 (ECM)及重組(remodeling). 細胞外質 (extracellular matrix, ECM)爲細胞分泌出的基質，主要成份包括膠原蛋白 (collsgens)、纖維蛋白 (fibronectin)、Laminin, 和醣蛋白 (proteoglycan)。僅管細胞外質的破壞及重組已被認爲是胚胎著床及癌腫瘤進行轉移的必要過程，然而，對於調節細胞外質與內膜組織沾黏及位於細胞表面的特殊細胞外質受器 (receptors)之作用及常被認爲與醣化作用 (glycosylation) 相關的醣質分子仍需進一步之確任，此外，於子宮內膜異位症患者體內異常之表現，及其調節機轉及訊息傳遞之機制並不清楚。因此，本研究將著重在觀察細胞外質之表現，與子宮內膜組織沾黏之關聯及醣質分子之表現與所扮演之調節角色作系統性及全面性的分析。目前，以基因方法研究生物分子功能的技術包括 DNA 晶片、微矩陣技術 (microarray)，可全面性分析基因的表現。此外，蛋白質體學(proteomics)，則是一種全面性分析某種生化狀態下蛋白質的表現。此方法可同時觀察一個完整細胞於某種情況下所表現的蛋白質，相較於傳統方法，一次僅能針對一種或數種蛋白質作研究已有效率許多。本計畫擬由台北醫學大學附設醫院婦產部不孕症中心支援，提供子宮內膜異位患者檢體，找出其中與細胞外質表現相關的基因表現與本計畫將採用蛋白質體學技術觀察蛋白質表現作相互對照分析，以期從研究中發現引起子宮內膜異位的致病標計因子 (markers)，將可用於早期的診斷，也可 能發展出其他的治療對策，例如免疫療法，進而減少不孕症的發生.

- 英文摘要

The gene expression profile may not provide sufficient information to interpret the biophysiological mechanism, for examples, the regulatory roles of glycosylation, a kind of post-translational modification on proteins and the enzymatic activity, unless the investigation of protein expression profile is also completed. Proteomic analysis assists the genomics by focusing on generate a global protein expression profile in a specific condition. However, it is concerned that the proteome approach may not complement the details of protein glycosylation and the dynamics of glycosaminoglycan modification on protein. It is known that aberrant glycosylation affects the cell's behavior such as tumor cell invasion and metastasis. And the tumor-associated glyco-epitopes could be used as a tumor marker in monitoring the tumor progression. The diseased endometrium in the endometriosis patient behaves like the tumorous tissues that migrate, invade, adhere, and escape the control to grow at distal site. Although the tumor markers, CA-125 and CA19-9 were suggested to be markers to monitor the endometriosis development. The specificity and sensitivity; however, is the problem. We reported that the inhibitor of matrix metalloproteinase, TIMP-1 was detected in sera in the patients with endometriosis whereas it was non-detectable in normal and the patients have received the GnRHa treatment, suggesting that TIMP-1 could be a useful serum marker for the early diagnosis of endometriosis (The research is supported by NSC grant 91-2314-B-038-051, part of the results have been reported in the conference ASRM 2002, and the manuscript is in preparation for publication). However, it is difficult to rely on any of the reported individual marker for diagnosis of endometriosis. To increased the specificity and sensitivity for diagnosis of the endometriosis, We in an attempt to use proteome/glycome approach to globally screening the aberrant protein and glycosylation expression in the body fluid such as serum as well as the diseased endometrium tissue to identify the potential group of markers for diagnosis of endometriosis. To find the distinct markers to diagnose early for endometriosis, develop alternative therapeutic method to decrease the side effects, and prevent infertility are the goals of this study.