

天然高分子奈米金複合基材促進內皮細胞移動速率之探討  
Study the Migration Effect of Endothelial Cells on  
Natural Polymer -Nanocomposites.

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**中文摘要：**

我們以適量之奈米金粒子修飾兩種不同的天然高分子：膠原蛋白(collagen, Col)與纖維連結蛋白(fibronectin, FN)之表面形成奈米金複合基材(gold nanoparticle, Au)，以此基材為研究模式，探討其促進內皮細胞移動與增生之相關分子訊息機制。奈米基材與內皮細胞交互作用機制初步相關檢測方法列舉如下：利用細胞增生實驗(MTT assay)來測試基材促進內皮細胞之增生效應；利用細胞遷移實驗(migration assay)測試基材促進內皮細胞的移動速率；利用西方墨點法(Western blotting)及免疫螢光染色(Immunofluorescence staining)來測定基材促進內皮細胞eNOS (endothelial nitric oxide synthase, eNOS)蛋白的表現；利用螢光染色(phalloidin staining)方法，觀察基材促進內皮細胞貼附能力及細胞骨架之表現型態。希望此奈米基材能夠有效應用於組血管織工程。

**關鍵詞：**內皮細胞；高分子奈米金複合基材；細胞遷移

**Abstract:**

Amount of gold nanoparticles modified in two different natural polymer: collagen and fibronectin formed gold nanocomposite, this substrate for the study to explore that it can promote endothelial cell migration and proliferation related molecules message.

Interaction mechanisms of nanocomposite and endothelial cell are listed such as: MTT assay to test the endothelial cell proliferation effect with nanocomposite; migration assay to test the endothelial cell migration rate with nanocomposite; western blotting and immunofluorescence staining to determine the performance of eNOS protein to the endothelial cells with nanocomposite; staining method to observe the expression of cell adhesion and cytoskeleton.

**Keywords:** endothelial cells; nanocomposites; migration