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• 計畫中文名稱	鎳離子對血管細胞的毒性及其機轉		
• 計畫英文名稱	The Cytotoxicity and Mechanism of Nickel Ion on Vessel Cells		
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• 中文關鍵字	--		
• 英文關鍵字	Cytotoxicity; MTT test; Cytokines; Nickel chloride; Nickel sulfate; Nickel hydroxide		
• 中文摘要	查無中文摘要		
• 英文摘要	To our knowledge, metals are widely used in clinical applications, especially the nickel containing alloys such as 316L stainless steel, nitinol, and MP35N alloy for endovascular stent usage. Previous studies revealed that corrosion of implanted metal alloys could release Ni++ ion into surrounding physiological fluid and tissues, and was reported to induce inflammation at sub-toxic concentration. Nickel induced inflammation may be one of the trigger mechanisms of stent complication such as thrombosis and in-stent restenosis. Nickel leaching from alloys and to surrounding tissue could cause inflammation were also proved in our previous studies. Some papers reported that nickel is a cytotoxic agent in several types of cell culture and in animal model, but rare reports about the vessels cells. We used nickel ion solution in sequential concentration to explore and mimic the cytotoxicity of nickel ions released into the liquid medium. Three nickel compounds nickel sulfate, nickel chloride, and nickel hydroxide were dealt with in vitro study on the cytotoxicity on cell culture of human endothelial cell, vascular smooth muscle cell, and fibroblast. MTT test showed the TC50 of all the three types cells is between 102 to 103 .mu.M of Ni(OH)2 ,NiSO4 and NiCl2 solution. But a exception is found on Ni(OH)2 solution that cell viability is elevated to 140% on 103 .mu.M of Ni(OH)2. The cell death is apoptosis dominant proved by DNA ladder and TUNEL assay, not related to Bcel-2 or Bax. We still work on some other cell death protein and pathway , before the data, we can not conclude the death mechanism.		