• 系統編號	RA8909-0108		
• 計畫中文名稱	P450c21 基因調控與蛋白功能(II)		
• 計畫英文名稱	Gene Regulation and Protein Function of P450c21 (II)		
• 主管機關	行政院國家科學委員會	• 計畫編號	NSC83-0412-B001-004-M02
• 執行機構	中央研究院分子生物研究室		
• 本期期間	8302 ~ 8307		
• 報告頁數	0 頁	• 使用語言	英文
• 研究人員	鍾邦柱 Chung, Bon-Chu		
• 中文關鍵字	基因調控；蛋白質功能；基因表現；突變；c21A 基因		
• 英文關鍵字	Gene regulation；Protein function；Gene expression；Mutation；c21A Gene		
• 中文摘要	查無中文摘要		
• 英文摘要	Steroid 21-hydroxylase (CYP21) deficiency is the major cause of congenital adrenal hyperplasia, a common genetic disease due to steroid imbalance. The main cause for the mutation of the CYP21A2 (c21B) gene is conversion of its nucleotide sequence to the neighboring homologous but nonfunctional c21A gene. We have in this report analyzed the transcriptional activities of the c21A and c21B genes. Transient transfection assays showed that transcription derived from the c21A gene was about 5 fold lower in strength than that of the c21B gene, although both sequences responded to cAMP normally in two adrenocortical cell lines. The normal response to cAMP could probably be attributed to equal activation of both genes by a transcription factor Nur77. The lower transcriptional activity of the c21A gene was attributed to sequence changes within 167bp of the 5'-flanking region, which differs from the c21B gene by only 4 nucleotides at positions around -100. These 4 nucleotide changes render the c21A sequence bind proteins less tightly than the -100 region of the c21B sequence, which binds proteins such as transcription factor Sp1 in electrophoretic mobility shift assays. The reduced transcription due to nucleotide changes at the regulatory region of the c21A gene in combination with other mutations in the coding region could play important roles in 21-hydroxylase deficiency.		