The suppression effect of DNA sequences within the C4A region on the transcription activity of human CYP21.

張淑芬
Chang SF and Cheng CL

Abstract

Two CYP21 genes, the active CYP21 and the pseudogene, CYP21P, also pairs of duplicated genes including the XA, XB, XB-S; YA, YB; and ZA, ZB are arranged in tandem next to the serum complement C4 genes (C4A and C4B). In this report, we have analyzed the influence of some DNA sequences within the C4A/CYP21P region on the transcription activity of the human CYP21. After transiently transfecting the plasmid constructs into mouse adrenocarcinoma Y1 cells, mouse testis Leydig tumor MA10 cells and human liver tumor HepG2 cells, our results showed that sequences located within the -13943/-13174 and -3278/-2586 regions upstream from the CYP21P had suppression effects on the promoter activity of human CYP21. However, the short sequences spanning from -8415/-8373 and -4511/-4140 upstream from the CYP21P did not alter the basal transcription activity of the CYP21 gene. Our results indicated that specific sequences within the C4A region might function as suppressor-like elements for the transcription of human CYP21.