Effect of neonatal exposure to diethylstilbestrol on testicular gene expression in adult mouse: comprehensive analysis with cDNA subtraction method.

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In utero or neonatal exposure to high levels of exogenous steroid hormones, such as the potent synthetic diethylstilbestrol (DES), incurs an increased risk of malfunctional male reproduction. In this study, we investigated whether neonatal exposure to DES induces the alteration of mRNA expression in adult mouse testis. Using a cDNA subtraction method, we isolated seven gene clones whose expression was changed in neonatally DES-treated mouse testis. Northern blot analysis revealed that five up-regulated genes (AF326230, AF356521, AK004975, AK006136 and BM237156) and two down-regulated genes (AK017044, AK017130) were predominantly expressed in testes of 8-week-old mice. Moreover, we confirmed that the expression of these seven genes was altered by neonatal DES-exposure using Northern blot analysis. Our results suggest that neonatal exposure to DES leads to the alteration of gene expression in the testis in the long term. These genes might be useful as biological markers of foetal or neonatal exposure to exogenous steroid hormones, such as DES.