
**Abstract**
The adrenal cortex is the site of the synthesis of the steroid hormones such as the glucocorticoid cortisol and the mineralocorticoid aldosterone. The pathway of biosynthesis of these steroids from cholesterol involves a sequence of transformations using cytochrome P-450 enzymes. The hypothesis presented here is that damage to cytochrome P-450 enzymes on interaction with certain steroids, synthesized by the adrenal cortex itself, may be of pathological and perhaps physiological importance. The interaction between cytochrome P-450 enzymes and these steroids, which act as pseudosubstrates, may form part of the pathogenesis of some steroidogenic enzyme deficiencies, with consequent overproduction of precursor steroids, leading to mineralocorticoid or androgen excess. This interaction is dependent on achieving high concentrations of the pseudosubstrate steroids in the adrenal cortex, which probably occurs as a result of the arrangement of the vasculature in the adrenal gland. High concentrations of steroids may be expected to accumulate in steroidogenic cells, both in culture and in vivo, and may have autoregulating effects. The high content of antioxidant compounds in the adrenal cortex, principally ascorbate, may serve to protect cytochrome P-450 enzymes from the damaging effects of oxygen radical species formed as a result of cytochrome P-450/pseudosubstrate interactions.