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## Formation of Free Radicals and Active Oxygen Species from Diethylstilbestrol and Its Derivatives

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Diethylstilbestrol (DES), an estrogen analogue, was converted into a free radical in alkaline dimethyl sulfoxide as well as in an H<sub>2</sub>O<sub>2</sub>/peroxidase system. The presence of the hydroxyl group of the DES molecule was essential to free radical formation. Indenestrol A (IA), a microsomal metabolite of DES, showed a paramagnetic property without enzymatic activation. The electron spin resonance spectrum of IA seemingly corresponded to that of the enzymatically formed DES radical. In an NADH peroxidase system, DES induced concomitant production of active oxygen species, which were also produced by IA. Related compounds of IA were also examined to compare with DES and IA. The significance of the free radical is discussed in relation to the process of carcinogenesis by DES.

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