Dibenz[*a*,*h*]acridine

Pg.4-ln.21-pg.5 ln 9

The mutagenicities of dibenz[*a*,*h*]acridine and dibenz[*a*,*h*]acridine-1,2-, -3,4-, -8,9-, and -10,11-dihydrodiols were assessed in Salmonella typhimurium TA100, in the presence of hepatic microsomes from immature Long Evans male rats pretreated with Aroclor 1254. Dibenz[*a*,*h*]acridine-10,11-dihydrodiol, the precursor of the bay region dibenz[*a*,*h*]acridine-10,11-diol-8,9-epoxides, was *ca.* 3-fold more active than dibenz[*a*,*h*]acridine at 125 μM, and approximately 12-fold more active than dibenz[*a*,*h*]acridine- 3,4-dihydrodiol, the metabolic precursor of the dibenz[*a*,*h*]acridine-3,4-diol-1,2-epoxides. Activation of the dibenz[*a*,*h*]acridine-1,2- and dibenz[*a*,*h*]acridine-8,9-dihydrodiols to mutagenic products in TA100 was almost negligible. The mutagenic activities of the four bay-region diol epoxides from dibenz[*a*,*h*]acridine (racemic *cis*- and *trans*-3,4-diol-1,2-epoxide; racemic *cis*- and *trans*-10,11-diol-8,9-epoxide) were assessed in both bacterial and mammalian cells. The diastereomeric 10,11-diol-8,9-epoxides were 20-40-fold more mutagenic than the corresponding 3,4-diol-1,2-epoxides in *Salmonella typhimurium* TA98 and TA100, with the *trans* 10,11-diol-8,9-epoxide being *ca.* 2.5-fold more active in either strain than its *cis* diastereomer. In the Chinese hamster V79-6 cell line....., (Wood *et al.*, 1989).

17 carcinogenic PAHs. In the case of dib[illegible]

18 monooxygenation pathway, rather than one-electron oxidation (Xue et al. 1999).

19 An earlier study reported that the relative tumorigenicity of dibenz[*a*,*h*]acridine and other aza analogues (induction of

20 sarcomas following subcutaneous administration of the compound in paraffin to female Wistar

21 albino rats) was directly proportional to their electron donation (*i.e.*, ability to undergo oxidation)

22 and inversely proportional to their electron acceptance, assessed by polarography (Bahna et al.,

23 1978).