Promoting effect of di(n-butyl)phthalate on urinary bladder carcinogenesis in rats initiated by N-butyl-N(4-hydroxybutyl)nitrosamine

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The modifying potential of di(n-butyl)phthalate (DBP) on the second stage, N-butyl-N(4-hydroxybutyl) nitrosamine (BBN)-initiated urinary bladder carcinogenesis were investigated in male Sprague-Dawley rats. Six-week-old rats received 0.05 % BBN in their drinking water for 4 weeks and then DBP (0.00001, 0.0001 and 0.001% DBP group) or vehicle (tap water: Vehicle group) were given during experimental weeks 10-26. All rats were killed at the end of weeks 26 of the experiment, after then the densities of putative preneoplastic, papillary or nodular (PN) hyperplasia were revealed in the vehicle control group. The incidences of PN hyperplasia / 10 cm (basement membrane) of the low DBP dose group were similar to those of the Vehicle group, but those of the high DBP dose group was significantly lower compared to those of the Vehicle group. The present study indicated that 0.001% DBP group inhibiting effects on BBN-initiated urinary bladder carcinogenesis, and these events showed dose relationship.