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Comparison of the in vivo genotoxicity of penciclovir (PCV) acyclovir (ACV), ganciclovir (GCV), and caffeine (CAF). I. de G. Mitchell, P. Haynes and T. R. Lambert. SmithKline Beecham Pharmaceuticals, Welwyn, Herts AL6 9AR, UK.

PCV, ACV, GCV and CAF all exhibit anti-viral properties and all have been shown to be genotoxic in separate in-vitro and in-vivo studies. Because of their widespread use, we considered it important to directly compare their relative in-vivo genotoxic potencies. Accordingly, mouse micronucleus assays using two doses (at 0 and 24h) and a single sample (at 48h), were performed twice on each compound. PCV and ACV appeared to cause arithmetic increases in micronucleated polychromatic erythrocytes (MPNCE) with arithmetic increases in dose with apparent thresholds at approximately 1080umol/kg per dose and 320umol/kg per dose respectively. The dose-response curve for GCV appeared more exponential, without a threshold, but with a no-effect dose of around 150umol/kg per dose. CAF gave very small increases in MNPCE only at, or near, systemically toxic doses with a no-effect level of about 390umol/kg per dose. Taking into account magnitude of response, slope of dose-response curve and no-effect doses, the order of potency was GCV > ACV > (CAF?) > PCV. Although the relevance of these findings to human risk is uncertain, PCV clearly has the lowest in vivo genotoxic potential.

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Rheum Palmatum Therapy for Herpes Simplex Virus infection in Mice

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Previously paper had demonstrated the effect of rheam palmatum against herpes simplex virus (HSV) in vitro(Luo J et al. J Natl Infect Dis, 1991). In order to confirm the therapeutic effect of rheum palmatum in herpes simplex virus infection in mice. Animial model of herpetic encephalitis was used to demonstrated the pontential of rheum palmatum. The mice were treated subcutaneously with rheum palmatum after 24 hour infection initiated. The dosage were 3.3g/kg, 6. 7g/kg and 11.3g/kg daily for 7 days. The results shown that the survival rate were 0.0%, 61.5% and 30.8% in each group, but means time death (MTD) were 6.3, 29.4 and 20. 5 days in each groups. The survival rate and MTD were 23.1%and 19.0 days in acyclovir group (100mg/kg daily for 7 days). All mice has no survival, MTD were 4.8days in HSV control group. The mean virus titer of the rheum palmatum treated groups were Lower than in untreated group in brain, Liver, heart, These results indicate that the rheam palmatum has anti-herpes activity in vivo, antiviral effect is similar with acyclovir.