Dose escalation and pharmacokinetic study of nanoparticle curcumin... by Kanai et al., CCP 69:65–70, 2012

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Dear Editor,

Kanai et al. [1] report on the pharmacokinetic properties in healthy human volunteers of theracurmin, a novel nanoparticulate formulation of the diet-derived putative cancer chemopreventive agent curcumin. The plasma concentrations reported in this paper are of curcumin conjugates, not of parent curcumin, because the authors routinely hydrolysed plasma samples prior to HPLC analysis using beta-glucuronidase. More than 90 % of curcumin derived-species in the mammalian biophase are curcumin conjugates, predominantly glucuronides. Curcumin also undergoes metabolic reduction. Based on current evidence, parent curcumin—rather than its metabolites—is thought to mediate the anti-carcinogenic properties of this agent. Therefore, the claim made in this paper that theracurmin achieves “...improved bioavailability in human subjects...” as compared to that observed after unformulated curcumin is unsubstantiated. In Table 2 of their paper, Kanai et al. compare plasma levels of curcumin achieved after consumption of theracurmin in

this study with those which have been reported previously in the literature in humans who received unformulated curcumin. This comparison is unfortunate, as four of the eight studies listed in the table describe levels of parent curcumin (Shoba et al., ref 28, Cheng et al., ref 7, Sharma et al., ref 27, Garcea et al., ref 10), whilst the other four (Lao et al., ref 16, Vareed et al., ref 34, Kanai et al., ref 14, Sasaki et al., ref 25) report levels of the sum of curcumin and its conjugate metabolites. It is a pity that in their recent CCP paper Kanai et al. did not present levels of parent curcumin.

Reference

1. Kanai M, Imaizumi A, Otsuka Y, Sasaki H, Hashiguchi M, Tsujiko K, Matsumoto S, Ishiguro H, Chiba T (2011) Dose-escalation and pharmacokinetic study of nanoparticle curcumin, a potential anti-cancer agent with improved bioavailability, in healthy human volunteers. *Cancer Chemother Pharmacol* 69:65–70

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