To the Editor:

I read with great interest the recent article by Townsend et al, who investigated the acute effects of casein protein hydrolysate (C-12 peptide) in hypertension.1 Based on some encouraging laboratory data and some small human studies, the area of blood pressure (BP) regulation by dairy peptides is certainly worthy of investigation.2 The authors make clear in the introduction that there is a lack of data to support the marketing claims of nutraceuticals for hypertension and state the need for clinical research to determine efficacy.

In present study, funded by nutraceutical company DMV International, the C-12 marketed by this company was not found to be effective in lowering BP. The abstract is misleading, as it implies that C-12 was effective in lowering BP and does not state clearly that it failed statistically at the daily doses used. The natriuretic effect of the alginic acid, particularly at the high dose, is likely to be responsible for the observed effect of the combination of C-12 and alginic acid. The lack of an alginic acid–only group allows the researchers to infer that a synergistic effect is at work between C-12 and alginic acid.

The investigators also state that in a positive human study using Calpis sour milk there were several subjects with gastrointestinal (GI) symptoms.3 Townsend et al state that GI side effects were not apparent in the present C-12 peptide study. Such a comparison of side effects is inappropriate, given that one agent (sour milk) was taken daily for 8 weeks whereas the other (C-12) was taken for 1 day per week. A close look at the sour milk study shows that there was one subject consuming sour milk who had GI symptoms, not several subjects.3

Despite the negative findings, the investigators put a positive spin on the data related to C-12. In the December 2004 issue of Functional Foods and Nutraceuticals, DMV International placed a full-page advertisement stating that the peptide helps to regulate BP and “After much success in Japan, the C-12 peptide will soon be introduced into dietary supplements worldwide.”4 At no point in the Discussion section or in the summary of the Townsend et al article do the authors state that the C-12 peptide alone was not effective in lowering BP and that sodium alginate should be tested against C-12 to determine efficacy. Many individuals may read only the abstract, which also does not address this issue and merely states that the data are encouraging. This only serves to widen the great divide in the marketing and research of natural products.

Response to Dr. Logan

To the Editor:

Dr. Logan raises three concerns regarding our recent publication of the blood pressure (BP) effects of the casein-based peptide “C12,” given alone or with alginic acid, to hypertensive human volunteers.

The first concern was that the article was misleading in how we reported the antihypertensive effect of C12 alone. The second concern was that the side effects were inappropriately compared between our study and those in the existing literature. Finally, Dr. Logan asserts that our study only served “to widen the great divide in the marketing and research of natural products” because our article presented the C12 data in a positive way and did not acknowledge the possible antihypertensive effects of alginic acid alone. We appreciate his concerns and the opportunity to address them here.

Our study,1 reported in the November 2004 issue of the Journal, was undertaken as a feasibility study for a larger trial specifically comparing C12 peptide alone to C12 peptide with alginic acid. We did not include a treatment with alginic acid only, because a previous animal study showed that alginic acid alone did not significantly reduce BP (unpublished results; see Fig. 1). Briefly, spontaneously hypertensive rats (n = 6) 8 weeks of age were fed normal food or normal food with two doses of C12 peptide alone, alginic acid alone, or the combination of C12 peptide and alginic acid daily for 4 weeks. As shown in Fig. 1, the high dose of C12 (200 mg/kg) showed a significant reduction in BP after 4 weeks of treatment. Interestingly, an additional antihypertensive effect was observed when alginic acid alone was supplemented with C12.