The distributed model, though possibly oversimplified as well, is certainly a much better representation of the physiological facts. It may even be correct, because on closer inspection (2, 4) the distributed model turns out to be free of restrictive assumptions that the sinusoids are of uniform bore or that each liver cell has the same transport capacity. The interpretation moreover is virtually independent of variations in the distribution of flow to a large population of sinusoids.

Compartmental analysis is a powerful tool for gaining new physiological insights. Its utility, however, depends critically on the validity of the underlying assumptions. If these are wrong so will be the results. The worst of this is that model-dependent interpretations of the data can rarely, if ever, be used to validate the preconceptions on which the model was constructed. We suggest that Colburn may wish to reconsider the simplistic assumptions on which his model rests before taking too seriously the conclusions that flow from it.

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Albumin Binding and Hepatic Uptake: The Importance of Model Selection—A Response

Keyphrases □ Albumin—effect on removal of taurocholate by the liver □ Taurocholate—removal by liver, albumin

To the Editor:

Forker and Luxon have written an interesting rebuttal to my earlier communication (1). However, it only serves to confuse the issue even more.

Forker and Luxon presented data in their original report, which they interpreted using the parallel tube or "distributed" model (2). They concluded that albumin helps mediate the removal of taurocholate from a perfused liver preparation. Using the same data, I presented an alternate interpretation using the widely used and accepted well-stirred, venous equilibrium or "lumped" model. I concluded that albumin does not mediate taurocholate removal.

In their rebuttal (3) Forker and Luxon attempt to lend physiological credence to the parallel tube model at the expense of the well-stirred model. Neither model is physiologically realistic in that the liver is neither a well-stirred beaker nor is it a series of parallel tubes.

The theoretical basis for each of these two models has been developed and discussed in depth (4–6). Although the well-stirred model has been shown to be more predictive than the parallel tube model, in some cases (7–8) it would seem that neither model holds a universally distinct advantage over the other and that attributing physiological meaning to parallel tube model-based conclusions, which contradict previous work in the area, would seem unjustified without further substantiation. Unless the data are unequivocal, parsimony should rule, and if a model must be chosen the one that is time proven (7–9) should prevail.

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