Reviewer's report

Title: Positional distribution of palmitic acid in palm oil improves weight gain, blood lipid metabolites and fat deposition in a pediatric pig model

Version: 1 Date: 4 March 2011

Reviewer: Sukhinder Kaur Cheema

Reviewer's report:

A comparison between native and randomized TAGs is the subject of this paper taking into consideration the role of stereospecificity of fatty acids in metabolic processing.

This comparison is performed by using the pig model which is a biomedical model for energy metabolism and obesity in humans because it is devoid of brown fat postnatally and also because of their similar metabolic features, cardiovascular systems, and proportional organ sizes.

As far as the literature search permits, it appears that similar research papers have previously been published in this area thus the presented findings are not novel. The authors show that the positioning of unsaturated versus saturated fatty acids in the sn-2 position of TAGs indicates differences in early metabolic processing and postprandial clearance. It is further reported that the distribution of fatty acids on the triacylglycerol (TAG) molecule and the molecular TAG species generated by this stereospecificity are characteristic for various native dietary TAGs. Similar research findings have been published by the following authors:

- Innis et al., Formula containing randomized fats with palmitic acid (16:0) in the 2-position increases 16:0 in the 2-position of the plasma and chylomicron triglycerides in formula-fed piglets to levels approaching those of piglets fed sow's milk. J Nutr 1997, 127:1362–1370.


- The idea of increase body weight after feeding the pigs the palm oil slurry was already published in Animal Feed Science and Technology, the response of weaner pigs to diets containing palm oil slurry, Volume 71, Issues 1-2, 31 March 1998, Pages 191-195, this reference is not cited by the authors.

Title: needs to be more specific, the reader should get the point that EnPO is the one which is responsible for the weight gain and NPO is responsible for the decrease in LDL-C.

Page 10: “there was evidence...........” , need a reference for the evidence.
Although Authors used 20 males, 20 females in their study, they did not mention if there was Gender differences in the results.

Conclusion:
This work has no novelty and it will be better if accompanied with data from adult pigs.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
No competing interest