Reviewer’s report

Title: Tuning of liver mitochondrial plasticity during brain tumor development

Version: 1 Date: 23 May 2006

Reviewer: Jose C Fernandez-Checa

Reviewer’s report:

General
This manuscript evaluates the dynamics of water distribution as well as lipid composition and cholesterol content in rat liver mitochondria after the generation of tumors in the brain, to test the hypothesis that extrahepatic tumor development affect liver mitochondrial biogenesis and overall biophysical behavior.

Major Compulsory Revisions

The major weaknesses of the present study is the mitochondrial fraction they seems to work with. The authors used a previously reported method to prepare mitochondrial crude fraction, and this reference in a book chapter is not readily available. Nevertheless, it seems that the authors prepare a crude mitochondria prep and no information regarding enrichment, extramitochondrial contamination has been provided in the manuscript. This detracts from part of the information the authors evaluate, such as the lipid composition (PUFA and cholesterol) as it is possible that mitochondria may be contaminated by microsomal membranes, especially when prepared in a crude fashion.

The units of cholesterol levels reported in page 8 should be reexamined and expressed as per mg mitochondrial protein, rather than as per g mitochondria.

If physical and dynamic membrane perturbations occur in liver mitochondria, it would be reassuring to assess whether mitochondrial membrane fluidity becomes affected.

The authors correlate the changes in water dynamics with apoptosis as expressed in the abstract. However, there is not measurement of apoptosis in the paper. The only related proof is the activity of caspase 3 in the liver. This should be clearly stated in the abstract to avoid confusion.

The title is inappropriate as it is too general and does not reflect what it is presented in the study.

The authors omitted the statistical analyses in the Methods.

Minor Essential Revisions

N/A

Discretionary Revisions

In the discussion the authors do not provide insights as to the mechanism underlying the hepatic mitochondrial changes observed due to extrahepatic tumor development.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No

Declaration of competing interests:
I declare that I have not competing interests.