Reviewer's report

Title: Cholinesterase Research Outreach Project (CROP): Measuring cholinesterase activity and pesticide use in an agricultural community

Version: 1 Date: 20 April 2015

Reviewer: MIGUEL A SOGORB

Reviewer's report:

This manuscript describes a study protocol for performing a further epidemiological study for monitoring the exposure of farmers to organophosphorus pesticides using cholinesterase as biomarker.

The hypothesis of the study is well-described. However, I have some discrepancies with the authors and I consider that some changes are needed in the background section.

MAJOR COMPULSORY REVISIONS

The proposed protocol will be suitable for monitoring Public Health of farmers regarding cholinergic effects. However, I have serious doubts that it was useful for preventing chronic neurological diseases because the targets of toxicity for these effects, although they presumably are esterases, are still unknown and therefore we do not know sensitivity. In addition, it is well-know that in most cases people affected for this kind of diseases never suffered a cholinergic crisis. Therefore, the graduation of Figure 2 is not relevant for such purposes. It should be stated in the background.

MINOR ESSENTIAL REVISIONS

Other changes might be needed in the methods/design section too:

Which is the aim of the anthropometric measures? They are justified in the manuscript because can identify distinct fat distribution changes that occur in the elderly. However, this is an occupational epidemiological study and therefore these supposed changes should be irrelevant. Please, clarify this point.

Which is the aim of the biochemistry (cholesterol, glucose,…) analysis in blood? Please, justify.

Which cholinesterase and when will be recorded (erythrocyte or plasma)? Please, clarify because this is not described and the Table 1 the erythrocyte cholinesterase entry does not have marks.

Which will be the procedure for cholinesterase records (Ellman, titration)?

DISCRETIONARY REVISIONS
The contents of the Kessler's questionnaire, despite it is validated, might be added to the manuscript for more detailed description of the protocol.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests