Reviewer's report

Title: Genotoxic Parameters and Tumor-Associated Protein Levels in Flemish Adults: Association with Area of Residence and Exposure to Pollutants. A cross sectional Study

Version: 1 Date: 2 March 2008

Reviewer: Annie J. J Sasco

Reviewer's report:

This is an important and pertinent paper. The topic is of major potential population interest and much too little is available, based on population data. Yet, some aspects of the paper could be corrected in order to make it easier to read and also more convincing. Much too much emphasis is put on the issue of statistical significance and control of confounding. Of course, many people judge these aspects as important but they detract, when given too much weight as is the case here from the more fundamental issue of biologica and health significance. So it is enough to say it once but to avoid repeating it at each occasion. this would also permit avoidance of repetitions and thereby lead to a more concise text. Overall the paper reads quite well, again even if some repetitions of words could be avoided (for ex. on the first line of the abstract. Some vocabulary could also be checked, such as the use of "pressure" when in fact most probably referring to "density" or the use of the politically correct "gender" when in fact referring to "sex" because dealing with biology and not with culture. I am not sure one has to say twice that the 2 portuary areas originally considered as 2 zones only became one. It is perfectly honest to say so, but may be it is really needed.

In the analysis, when looking at and/or controlling for smoking, 2 dimensions could and should be considered: daily dose and duration. In terms of etiology for cancer, duration carries much more weight than daily dose and by lumping the 2 together, there may be some dilution and therefore poorer control of confounding. May be the 2 dimensions of control could be kept; otherwise it could worth looking at which difference does it make to control just for duration rather than for the total number of cigarettes smoked over a life-time. Some definitions need to be given and then one should check if they really apply to the case at hand. For ex. authors should define "confounding" and also simple terms such as "normal" in the first paragraph on biomarkers of effect or more technically on the same page explain the meaning of "at least 30% DNA". Under Statitical analysis (but it does not belong there) more background should be given along with references to explain why some PCBs and not others were selected to "reflect exposure to PCBs in general". A few lines further your presentation and choice of potentially confounding variables as a function of what you are looking at is excellent. Congratulations for being both thoughtful and nicely descriptive. The Results part can be made shorter and less repetitive by avoiding repeating what was so well said in the Methods part on confounding. Also as statistical
significance can be judged from the figures in graphs and/or tables, there is no need to repeat it so often in the text. It will make for easier reading. Try to be more concise. Tables and text are in the paper to complement each other not to repeat. You should not write about "questioned exposure" but rather about "exposure as assessed from questionnaire". You also have one full paragraph without real sentences (no verbs!) which should be rewritten. When you discuss the CEA level, do not forget to mention also ovarian cancer. Check the spelling of some names (Nagayame or Nagayama?). In the figures by contrast no sentences are needed; be sure categories are clearly non overlapping. I am not sure all graphs are needed.

What next?: Accept after discretionary revisions

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.