Reviewer’s report

Title: Paraoxonase 1 (PON1) polymorphisms are not related with the risk for brain astrocytoma and meningioma.

Version: 1 Date: 17 February 2010

Reviewer: Nicola Vanacore

Reviewer’s report:

The paper addresses an important questions on interaction between PON1 polymorphisms and risk for brain astrocytoma and meningioma.

I have same methodological remarks that I feel should be addressed before the publication can be considered. (Major Compulsory Revisions)

In particular, I believe that some questions should be resolved:

1. the control group had a men age lower than the case group (44.5 ± 12.2 vs 51.7 ± 17.4 and 62.1 ± 11.7 for control and astrocytoma and meningiona brain groups, respectively). The control group is not probably matched for age to the cases (a statistical analysis should be performed). This means that could be among the controls subjects that could develop a brain tumor.

2. A statistical analysis should be performed to assess the possible departure from the Hardy-Weinberg law (Trikalinos TA et al., Impact of violation and deviations in Hardy-Weinberg equilibrium on postulated gene-disease associations; Am J Epidemiol 2006;163:300-9).

The authors declare that “the genotypes and allele frequencies between brain tumors patients and health subjects were in Hardy-Weinberg’s equilibrium”.

3. The authors should be report more cautiously the sample size calculation. The statistical analysis with a p value of 0.05 is much debatable since the discussion regarding the relation between p value and sample size in allelic association studies with complex disease is in progress (Zondervan KT et al. The complex interplay among factors that influence allelic association; Nat Rev 2004; 5:89-101; Colhoun HM e al. Problems of reporting genetic associations with complex outcomes, Lancet 2003;361:865-72). I believe that in this study a possible negative false results it can be not excluded.