Reviewer’s report

Title: Allele-specific polymerase chain reaction for the detection of Alzheimer's disease-related single nucleotide polymorphisms.

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Reviewer: Miguel Calero

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The manuscript describes the development of specific protocols based on allele specific PCR methods for the characterization of SNPs in several genes clearly associated to AD. Although the methodology presented here is time-consuming compared to other available alternatives, it requires inexpensive reagents and instrumentation readily available in most genetic labs. Therefore, these protocols can be implemented for the analysis of AD genetic risk factors in situations where funding is limited. The work is, in general, methodologically sound and well described. However, there are some areas for improvement.

Minor Essential Revisions

The inclusion of the most important AD risk factor, APOE, within the genes analyzed by this methodology will surely increase the interest and applicability of this manuscript.

Table 2 describing the frequency of genotypes from 100 human DNA samples is not relevant, as the focused of the paper is different.

Figure 3 depicting an example of direct DNA sequencing results is also not relevant for the manuscript.

Opposite, the different bands originated from each of the PCR allele specific protocols should be described in detail in the “results” section or included in a Table.

The description of commonly used terms such as DNA, APOE, ApoE should be avoided.

Please check Table 1 for inconsistencies. It seems that some primers are incorrectly underlined at the 3’-end. It would be also convenient to follow the same order to describe the primers for the different genes.

Figure 2 is difficult to follow. It would be advisable to check for clarity.

Some paragraphs in the “results” section should be rewritten for improve readability.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

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