Reviewer's report

Title: Implications of a RAD54L polymorphism (2290C/T) in human meningiomas as a risk factor and/or a genetic marker

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Reviewer: Jose M. Rojas

Level of interest: A paper whose findings are important to those with closely related research interests

Advice on publication: Accept after discretionary revisions

The paper by Leone et al. describes the association of a RAD54L polymorphism (2290 C/T) in human meningiomas suggesting that this polymorphism could be used as genetic marker in meningiomas. The conclusions are based on the statistical analysis of polymorphism distribution among meningiomas patients and healthy controls.

The paper is well written (independently of some mistakes) and organized and the methods are sound. The conclusions are based on the study of a large number of samples, although the analysis still will need to be corroborated in a larger molecular epidemiological screening.

The weakest point of this paper is the lack of mechanistic evidence linking this polymorphism with a change of phenotype, although the authors discussed different possibilities. Nevertheless, the study seems interesting and will have sufficient impact in the audience for its implications in cancer susceptibility.

Discretionary revisions

- The authors need to clarify the exact number of samples. The text of Abstract indicates 79 meningiomas from Spain and Ecuador, but in Methods (Tissue samples paragraph) indicates 29 Spanish tumors and 41 samples of meningiomas from Ecuador.

- The authors do not show any discussion and possible explanation about the difference of C/T polymorphism heterozygosity among meningiomas from Spain and Ecuador. Indeed, the meningeal tumors from Ecuador showed a very high rate of heterozygosity but not the meningiomas from Spain.

- The are different mistakes or misleading, thus:
  Second paragraph of Background: "In a previous exon by exon SSCP analysis..."
  In Method, paragraph corresponding to Statistical analysis: "....from maningioma..

- The figures of SSCP should be of best quality.
- Some epidemiological data of patients (sex, age at onset, TNM) should be showed and discussed

**Competing interests:**

None declared.