Reviewer's report

Title: Establishment of a murine epidermal cell line suitable for in vitro and in vivo skin modelling

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Reviewer: Yves Poumay

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In this paper, Segrelles and co-workers pose a well-defined question: is it possible to isolate from adult mice keratinocytes in a well-defined culture medium a cell line which is able to normally differentiate, reconstruct the epidermal tissue at the air-liquid interface, and is not tumorigenic?

The procedure is well described and data demonstrate that the answer to the main question is positive. The quality of presented data is high and data are convincing.

I solely regret that the authors remain silent about a few limitations seen on Figures 2 and 3. Indeed, in Figure 2, the suprabasal labelling of keratin 10 is not strictly suprabasal, being not homogeneous in the living suprabasal epidermal layers (some keratinocytes remain negative for K10 expression). This observation suggests that all suprabasal keratinocytes do not evenly express K10. This limitation should be discussed. In Figure 3 illustrating in vivo grafting, the COCA keratinocytes do not form an homogeneous tissue as the granular layer is sometimes absent, as well as related differentiation markers Loricrin and Filaggrin. These limitations in the differentiation program of COCA cells should be clearly noticed and discussed.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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

Declaration of competing interests:

I currently have no competing interest on this matter.