Reviewer's report

**Title:** Isolation and Culture of Smooth Muscle Cells from Human Acute Type A Aortic Dissection

**Version:** 1  **Date:** 3 February 2013

**Reviewer:** Xiao-Jun Prof. Du

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In this paper Lu et al described an improved method for primary culture of human aortic vessel SMCs. Importantly, they obtained human vessel tissues from patients with acute type-A aortic dissection, a potentially lethal conditions. They also characterized features of SMC using methods including FACS and immunofluorescence. This method should be useful for investigating their hypothesis that SMC malfunction contributes to the pathogenesis of aortic dissection. This reviewer appreciates the great effort by the authors in tissue collection and conducting this study. The paper is in general clearly written and the quality of images is good.

**Major comments:**

1. Obviously, demonstration of phenotype of SMC from patients with aortic dissection also depends on establishment of cells from healthy control subjects. Apparently this paper does not contain results from healthy controls and therefore comparison was not possible. I fully appreciate the difficulty of obtaining aortic tissues from healthy subjects. However, establishment of the method would facilitate the process when such an opportunity comes. This view may worth to be mentioned in the MS.

2. It is not clear from how many patients did aortic tissues collected but I guess that samples were collected from several patients. If this is the case, then please consider to compare among subjects on similarity and variation of cell phenotypes. A summary table of indices measured from different individual would be interesting.

3. In a few places, description of details was made using non-precise language. For instance, cellular confluence should be given as percentage rather than “a little confluence”. When you count positive cells, please give total numbers of cells counted.

**Minor comments:**

1. Have you compared proliferation rate of cell passages? Such information should be interesting.

2. There are some language errors that need to be eliminated in the revised version.

**Level of interest:** An article of importance in its field
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:

None to declare.