Reviewer's report

Title: Therapy with un-engineered naive rat umbilical cord matrix stem cells markedly inhibits growth of murine lung adenocarcinoma

Version: 1 Date: 28 November 2009

Reviewer: Surinder Batra

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Umbilical cord blood has been used for treating primarily malignant diseases. In this manuscript mainly describe about the intrinsic anti-cancer effect of rat umbilical cord matrix stem cells (UCMSCs) on lung cancer cells. The co-culture of rat UCMSCs with lung carcinoma cell line significantly attenuated the proliferation of lung cancer cells. UCMSCs as feeder layers markedly reduce the colony formation and in vivo studies further proved that rat UCMSCs treatment significantly decreased tumor weight. Over all, this work described the role of UCMSCs in the growth of lung carcinoma cells. The manuscript is well written and it needs to improve with following corrections for the publication.

1. The work only shows about the function and it needs to discuss more about the possible mechanisms of the growth inhibition in lung cancer cells by UCMSCs.

2. The background section needs to expand about the functions of umbilical cord stem cell therapy against cancer.

3. The normal colony formation (Plating efficiency) needs to show the anchorage–dependent growth of LLC cells.

4. Page 10, Line 5: It is written “To find out mechanism…….” The analysis of cell cycle may not be a mechanism for the UCMSCs growth arrest.

5. The percentage of cells cycle stages needs to mention in the result section (Page 10 Line 5).

6. In figure legend 1A mention the scale bar.

7. Since both figure 1A LLC alone and Figure 3A LLC control are same cells why it looks different in morphology.

8. Figure 4A all three representation figures are showing almost closely similar number of colonies formation (LLC alone #23, Rat UCMSCs: LLC (1:6) #22 and Rat UCMSCs: LLC (1:3). How this shows significant variation. Only difference is a little bit size variation of colonies between these groups.

9. Since figure 7A is a control for figure 7B but the magnifications of both the figure are not similar.
10. In the conclusion section summaries the manuscript’s result and then write the conclusion.

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

**Quality of written English:** Acceptable

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