

### **Responses for the Reviewer's #1 comments and suggestions:**

#### **Comments:**

This review provides valuable information about factors involved in MSC migration that eventually affects the efficiency of MSC therapy. The content is on the target and well organized. I may ask some small correction here:

1. P8, will the subtitle changed as 'Influence of hemodynamic forces' be better than 'Influence of shear stress'?
2. P9, last 4th row, should be 'shear stress' instead of 'shear tress'

#### **Response:**

Dear Reviewer,

The author wishes to thank this Reviewer for the valuable comments regarding this review manuscript. All your suggestions have been taken into account:

1. The subtitle has been changed according to the Reviewer's #1 suggestion.
2. It was a misspelling, thank you for pointing this error

### **Responses for the Reviewer's #2 comments and suggestions:**

#### **Comments:**

This review describes the factors regulating migration and homing of mesenchymal stem cells (MSCs). The varieties of MSC-based therapies in terms of the administration route are well discussed.

#### **Response:**

Dear Reviewer,

The author of this manuscript would like to express gratitude for the review.

### **Responses for the Reviewer's #3 comments and suggestions:**

#### **Comments:**

This review presents information on recent findings regarding the mechanism of recruitment and tissue homing by MSCs. The authors do a lot of work, but the structure of the review is poor and illogical. I think it's not suitable for publication in World Journal of Stem Cells. The opinions are as follows: 1. In the introduction part, the authors should define what is

“homing of mesenchymal stem cells ” ? Is it the ability of the cells to reach damaged tissues ?

2.The structure of the review lacks continuity in logic. It's better to divide the review in three parts, biological, chemical and mechanical factors regulating migration and homing of mesenchymal stem cells, just as the title indicates. 3.The review is intended to present information on recent findings regarding the mechanism of recruitment and tissue homing by MSCs and provide an overview of useful information for clinical practice on how by effectively regulating MSCs migration, uptake of MSCs in damaged tissues can be increased. However, this review lacks information for clinical practice on how by effectively regulating MSCs migration, uptake of MSCs in damaged tissues. This is important for readers and should be introduced in detail. 4.The reference “ 62. Aziz KA, Till KJ, Zuzel M, Cawley JC. Involvement of CD44-hyaluronan interaction in malignant cell homing and fibronectin synthesis in hairy cell leukemia. Blood 2000. ” is different from others, and this should be corrected. 5.Some of the subtitles of the review are not in concerned with the title and it's hard for the readers to understand the theme. This should be correct. 6.The review lacks the author's own opinion about the advantages and disadvantages about the methods of regulating migration and homing of m

esenchymal stem cells. And this should be discussed in detail.

### **Response:**

Dear Reviewer,

First of all, the author wishes to thank this Reviewer for the valuable comments regarding this review manuscript. Based on these comments the authors decided to reorganize the body of the review to achieve proper continuity of the manuscript.

1. The definition of "homing of mesenchymal stem cells" is explained in the "INTRODUCTION" section.
2. With that regard, the author decided to divide the review into four parts, the first on the routes of MSCs administration, and the next three on biological, chemical and mechanical factors regulating migration and homing of mesenchymal stem cells. It was also decided to remove the subsection " THE FLOW OF ENDOGENOUS MSCs".
3. This aspect was briefly discussed in the "CONCLUSIONS" section.
4. This reference was added incorrectly. The correct article was cited in the revised version.
5. The subtitles of the review have been rewritten.
6. The author's opinion has been added to the "CONCLUSIONS" section.