Reviewer's report

Title: Impairment of circulating endothelial progenitors in Down syndrome

Version: 1 Date: 13 April 2010

Reviewer: TINGWEI GUO

Reviewer's report:

The manuscript by Costa et al describes the in vitro functional and morphological impairment of endothelial progenitors isolated from human subjects affected by Down syndrome (DS), using different experimental approaches. This is a well-written paper that presents interesting information. And it is also a extending studies based on their previous studies. However, there are a number of points which I would suggest need to be addressed.

1. The authors isolated the EPC cells from human subjects and measured the SDF-1a plasma level in human plasma, but didn’t mention clinical information about those human subjects. The authors should cite a reference or give a supplement table which show the detailed clinical info.

2. Page 12: “SDF-1a plasma levels” paragraph 2: RT-PCR results of CXCL12 and CXCR4, the author should put the p-value after the fold change.

3. The authors compared the gene expression levels of chr 21 genes between DS patients and euploid. DS patients should have extra copy of chr 21, so most of the genes in chr 21 should be expressed higher than euploid in theory. The authors observed 37 genes up and 15 down regulated in chr21. How could the authors explain it? Do you have any plans to address it?

4. The author used 37 up and 15 down genes to do the GO classification, just curious what if the author just use the 37 up or 15 down genes, is there any difference between those analysis?

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.