Reviewer's report

Title: Proliferation, invasion and activation of cAMP response element binding protein (CREB) through the A2B adenosine receptor in trophoblast cells

Version: 1 Date: 30 September 2013

Reviewer: Florian Herse

Reviewer's report:

Darashchonak and colleagues nicely described the role of A2B adenosine receptor in a trophoblast cell line. They revealed proliferation, invasion and the activation of CREB as functions of the A2B adenosine receptor. Stimulation by hypoxia, A2B agonist and blocking by an A2B antagonist showed a functional role of the A2B in trophoblast. The study is innovative and from interest for the research field of preeclampsia and pregnancy. However, the study could benefit from small changes.

Specific comments:

Abstract, results: “Hypoxia in comparison to normoxia (2% O2)”, (2% O2) should be written behind Hypoxia and not normoxia.

Abstract, results: “1h after treatment; ..... 4h after treatment…..24h after treatment”. Isn’t it 1h 2% O2……4h 2% O2……24h 2% O2 ??!!!!

Abstract, results: Authors solely wrote “stimulated” or “activation of the receptor”. Please indicate in this part the active agents (NECA and MRS)!

Methods: Please correct the faulty formation of “alpha-actin” and “delta-delta Ct”.

Methods, Western Blot: “Western Blot was performed as described previously [24]”. What is the meaning of this sentence if there is an elongated description of the Western Blot method in the following??

Statistics:

Authors indicated that nonparametric tests were used. Was the data at first tested for normal distribution? It’s not indicated if authors did a multiple testing. All results presented here actually need a multiple testing as there are always more than 2 groups!

Figure 1: Please indicate a quantification of some Western Blot results.

Figure 3: Could others merge figure A and C and figure B and D? To reviewer it is somehow confusing that same time points with same agonist are distributed in 2 graphs.

Order of results/figures: If the proliferation (figure 3) and integration (figure 4) is a
result of phosphorylation of CREB, why is the CREB phosphorylation figure No. 5 and not No. 3?

**Level of interest:** An article of outstanding merit and interest in its field

**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