Reviewer's report

Title: Dexamethasone stimulates expression of C-type Natriuretic Peptide in chondrocytes

Version: Date: 15 August 2006

Reviewer: Mary Goldring

Reviewer's report:

General

This study describes effects of DEX on components of the CNP pathway and provides a basis for further studies to analyze how DEX treatment of growth plate populations in vivo affect skeletal growth.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Page 9 and Figure 1A: This shows the cell numbers per well at 72 h only and is not strictly a time course. The y-axis on the graph or the legend should indicate that these are cell numbers per well. It is not immediately obvious that the fold-changes stated in the text were based on plating of 100,000 cells per well at T=0. The statement in the figure legend that DEX "caused a significant reduction in cell number" is not entirely accurate, since DEX really decreased the rate of cell proliferation. The wording is more accurate in the text, but a complete time course might be more revealing. Why was this not done in Fig. 1A and B to mirror the time course shown in the other figures?

2. Discussion, page 11, last sentence of first paragraph: To avoid redundancy, suggest changing last clause to 'could account for some of the observed effects of these mediators'.

3. Page 11, paragraph 2: Again, DEX did not really cause a decrease in chondrocyte cell numbers, but a decrease in cell proliferation. However, apoptosis was not examined here and it is difficult to evaluate in the absence of time course curves.

4. Page 11, paragraph 2: Since the chondrocyte cultures probably represent a mixture of cell populations at different stages of differentiation in the embryonic growth plate, it is probably not possible to determine whether DEX affected Col2a1 or Col10a1 mRNA levels in individual populations except to say that the ratio did not change significantly. How does this finding reflect what is known about in vivo responses to DEX?

5. Have studies using DEX been done in a differentiating chondrocyte culture model such as ATDC5 cells? It would be interesting to know if the CNP pathway can be followed in that system. The authors should be encouraged to follow up these observations in vivo and in vitro to further evaluate mechanisms of cross-talk.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Discussion, page 11, last sentence of first paragraph: To avoid redundancy, suggest changing last clause to 'could account for some of the observed effects of these mediators'.

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interest.