Reviewer’s report

Title: Protective effects of biochanin A on articular cartilage: in vitro and in vivo studies

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Reviewer: Wen-Chin Yang

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The manuscript entitled “Protective effects of biochanin A on articular cartilage: in vitro and in vivo studies” by Wu et al. showed that biochanin A reduced the expression of MMPs but increased TIMP-1 in chondrocytes in response to IL-1 beta. Its action is related to inactivation of NF-kB pathway. In vivo study showed that biochanin A inhibited OA in the rabbit model.

This work is interesting in investigating the anti-inflammatory role of biochanin A in MMP, TIMP and OA in vitro and in vivo. Despite the use of biochanin A in inflammatory disorders, this study has kind of novelty in the field. However, several concerns need to be addressed.

Major concerns:

1. The effect of biochanin A on the production of secreted or intracellular MMPs proteins seems marginal (Fig. 3 and 4). In contrast, its inhibition on MMPs mRNA is much pronounced (Fig. 2). What is the reason for this contradiction?

2. In Fig. 6, please indicate the staining of cartilage (calcified cartilage, uncalcified cartilage; subchondral bone) with arrows. Description about the pathological changes for Fig. 6 and Table 1 needs to be provided in details.

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.

Declaration of competing interests:

I declare that I have no competing interests