Reviewer's report

Title: Immunologic Testing of Xeno-Derived Osteochondral Grafts Using Peripheral Blood Mononuclear Cells from Healthy Human Donors

Version: 1 Date: 21 March 2005

Reviewer: Henry Mankin

Reviewer's report:

General
An interesting offering which describes a study of immunologic testing of xeno-derived osteochondral grafts using peripheral blood mononuclear cells. The grafts were porcine, bovine or equine and were studied to evaluate the production of an array of interleukins and TNF-alpha. The samples were treated by photo-oxidation and compared against a control untreated group. Those samples treated with photo-oxidation had far less of an immune response suggesting the possibility that they might serve as allografts scaffolding.

The experiments were well performed and the description of the study and figures strongly support the authors’ contention that the material might be successful in the same manner as porcine heart valves. The study seems quite valid and further experimental procedures seem reasonable and appropriate.

Several issues:
1. Monocytes are not really a part of the host tissue in the joint…it is the chondrocyte that is likely to have a response and since they are considerably different in their reaction to immune challenge than monocytes it seems reasonable to use them as part of the study…and in fact compare the monocyte and chondrocyte responses.

2. The preparation of the monocytes may have diminished the likelihood that they would respond to xenografts and despite the difference in the control and the photo-oxidized material there is some concern regarding the validity of the model.

3. Photo-oxidation kills the cells in the graft and presumably that is reasonable as defined by use of valve grafts. There is some concern however for cartilage grafts which are probably very dependent on some degree of cell survival for any kind of functional result. Were the cells in the untreated grafts still viable? Is this the reason for the marked change in the macrophage response?

4. Have the authors considered using porcine grafts in ovine or bovine cartilage to assess the response of the cartilage to the immunologically foreign material?

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
Author should try to answer questions 1-4

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
none
Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Acceptable

Statistical review: No

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