Reviewer’s report

Title: A method to screen and evaluate tissue adhesives for joint repair applications

Version: 1 Date: 26 March 2012

Reviewer: Patrick Orth

Reviewer’s report:

Major Compulsory Revisions:

The Abstract need to be revised thoroughly, especially the Methods section remains unclear. I would suggest to include data in the Results part of the Abstract.

Histomorphometric analysis of cell viability in the osteochondral plugs is necessary to quantify the percentage of living cells among all cells.

If the adhesive strength of fibrin glue was increasing with assembly time (Results, Adhesive characteristics of fibrin glue), then indicate ssignificance by adding an asterisk in Figure 5a.

Give either data or the respective reference for your preliminary experiments that have shown that collagens adhere immediately (Results, Screening for potential tissue adhesives).

Discuss the fact that a mixture of adhesion and cohesion forces were observed for all measurements (Results, Adhesive characteristics of fibrin glue). This point seems to be of interest when comparing different adhesives.

In my opinion, the study has not investigated adhesives on “living” tissues as it is performed on ex vivo specimens that differ from “living” tissues in various aspects, including the lack of blood supply that may have a significant influence on adhesives within the osteochondral unit. Please delete the term “living” tissue throughout the manuscript.

Include in the Discussion section in which clinical situation adhesives would be of value to fuse two osseous interfaces (as tested in the present manuscript); is this aspect of the study clinically relevant?

Indicate in the Methods section (and in the Abstract) how many repetitions were performed with how many specimens for each test condition.

Minor Essential Revisions

Change “could” (Abstarct, 2nd line) to “can.
Change “und” (Abstract, last line) to “and.
Check the entire manuscript for mistakes in grammar; especially punctuation needs thorough revision.
Change “dead” (Results, Viability of tissue cylinders) to “apoptotic”.
Fuse the phrase “The method was kept simple.” (Discussion, last paragraph) with the following phrase.
Give additional references for the various animal models (Discussion, last paragraph).
Indicate the duration of transport to the laboratory (Methods, Preparation of test substrate cylinders).
Move the paragraph “Test of viability” between “Preparation of test substrate cylinders” and “Preparation of TE transplants”.
Change “subsequent” (Methods, test of viability) to “subsequently”.
Enlarge all Figures.

Discretionary Revisions
None.

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

Quality of written English: Needs some language corrections before being published

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.