Reviewer's report

Title: Gait analysis of C57BL/6 mice with complete Freund's adjuvant-induced arthritis using the CatWalk system

Version: 1 Date: 9 October 2012

Reviewer: Norbert Pallua

Reviewer's report:

REVIEWER’S COMMENTS: Major Compulsory Revisions

• The authors treated their animals with injection of CFA (Complete Freund’s Adjuvant) into the right hind ankle joint through the Achilles tendon of mice. They studied the gait of mice with CFA-induced monoarthritis and evaluated pain relief with indomethacin using the CatWalk-Gait Analysis System for static and dynamic parameters.

  o It is not clear why the authors did not include a control group with injection into the right hind ankle joint without CFA (e.g. by injection of 20μL saline solutions instead of CFA). It would be of great interest to compare the static and dynamic gait parameters between the CFA and non-CFA group. Maybe the injection itself (without CFA) would lead to changes in static and dynamic parameters due to pain or other reasons like injury of the joint.

  o It is unclear why the number of used animals per group is relatively low for reasons of reliability and validity. On page 8 it is mentioned that the group size ranged between 5 and 6 mice per group which is relatively low in comparison with other in-vivo studies using mice or rats. Furthermore, the author states the following on page 9: “The significant drop in regularity index at 2 dpi was mostly due to some mice that completely avoided stepping with the RH limb (about 38% of the mice), thus were walking with three limbs instead of four resulting in a zero regularity index for these mice (Fig.1 insert)”. This may indicate that a higher number of animals size may have led to a different result?!

  o Furthermore, it is not obvious why the author described a total number of n=32 of C57BL/6 mice (page 6, Methods-Animals), while the four mentioned groups make a total of n= 23 (6+5+6+6=23) (page 8; Drug treatment).

REVIEWER’S COMMENTS:

• It might be of interest to know why the author list consists of only one name. The current in-vivo study includes animal training, injection of drugs, postoperative CatWalk experiments, analysis of results and writing of the manuscript.

Level of interest: An article whose findings are important to those with closely related research interests
**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.