Reviewer's report

Title: Hypoglycemic effect of polysaccharides with different molecular weight of Pseudostellaria heterophylla

Version: 4 Date: 25 July 2013

Reviewer: xuan zhu

Reviewer's report:

• The present study aims to evaluate the influence of four different molecular weight of Pseudostellaria heterophylla (Miq.) Pax polysaccharide (PHP) in blood sugar, glucose tolerance, insulin tolerance, as well in pro-inflammatory, cytokines and chemokines and concludes that PHP with 50~210 kDa molecular weight prevent experimental T2DM induced by high-fat/lower dosage streptozotocin in rats.

• This is a well designed study with sufficient techniques and clearly presented results suggest that the specific MW range of PHP is thought to have a potential for type 2 diabetes treatments by performing in vivo evaluation. Interesting facts can be found from this study. Pseudostellaria heterophylla is a medicine extensively used in traditional Chinese medicine formulas to treat diabetes and its complications. The manuscript is acceptable and suitability for publication in BMC Complementary and Alternative Medicine.

• But some issues should be addressed:

1. Manuscript needs spelling, grammatical and syntactic corrections 2.In Abstracts, Background section “The polysaccharides with different molecular weight were compared for hypoglycemic active on two animal models both high does alloxan induced type1 diabetic mellitus (T1DM) and high-fat/lower does streptozotocin induced type2 diabetic mellitus (T2DM)” should be corrected The polysaccharides with four different molecular weight were compared for hypoglycemic active on two animal models both high does alloxan induced type1 diabetic mellitus (T1DM) mice and high-fat/lower does streptozotocin induced type2 diabetic mellitus (T2DM) rats.

3. Background section is too long. It should be intensively shortened and be made more concise less than 2/3.

4. Table 2,”Relative to model control” should be indicating how many days, it is not clear.

5. Figure 3A is hard to understand. Detailed layout of each biomarker should be provided.