Reviewer's report

Title: Genetic loci linked to Type 1 Diabetes and Multiple Sclerosis families in Sardinia

Version: 1 Date: 22 November 2007

Reviewer: Maggie Ng

Reviewer's report:

General
This is a well-designed study to investigate for the independent and shared genetic loci for two autoimmune diseases including type 1 diabetes (T1D) and multiple sclerosis (MS). The authors reported a major linkage peak at HLA for T1D, as well as several nominal linkage signals for T1D and MS. Interestingly, chromosome 10q and 20p demonstrated moderate increased linkage signals after fine mapping in the combined diseases, suggests the presence of shared susceptibility loci for both diseases.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In the discussion, more details should be given for the overlap of linkage signals at chromosomes 1q, 10q & 18p with other linkage and association studies, in particular the recent genome wide association studies.

2. Method: Paragraph 1. The total no. of affected T1D varies in the same paragraph. Line 5 suggests 297 diabetics while line 11 suggests 289 diabetics.

Discretionary Revisions (which the author can choose to ignore)

1. The linkage signals identified for T1D, MS or combined diseases were modest except for the known major T1D locus at HLA. It would be interesting to test for linkage at other regions by conditioning on the linkage result at HLA loci (e.g. using the method in Nature Genetics 1999, 21:213-215). This analysis may help to unravel novel loci which may interact or act synergistically with the HLA locus, which otherwise may be masked by the strong effect at HLA.

What next?: Accept after minor essential revisions
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.