Reviewer’s report

Title: Genetic variation of Mycobacterium tuberculosis circulating in Kharkiv Oblast, Ukraine

Version: 1 Date: 19 October 2010

Reviewer: Annalaura Facchini

Reviewer’s report:

In this paper, the Authors analyze the genetic profile of M. tuberculosis isolates from patients living in the Ukrainian region Kharkiv Oblast.

They first describe the rationale of the study, briefly explaining the role that molecular analysis could have in tuberculosis management, including drug-resistant forms.

The experimental section is divided into subgroups to explain the patients’ characteristics and selection criteria, to describe the different analysis methods (DNA isolation, VNTR-typing, Statistical analysis, RFLP-typing) and the identification process of mutations associated with the development of drug resistance.

The results include the analysis of drug resistance, the findings about the correlation mutations-drug resistance and the description of the data emerged with the two molecular typing methods.

In the discussion, the Authors compare the study results with literature data and suggest “that the discovery of the principal phylogenetic families of M. tuberculosis and the description of their properties, especially drug resistance, will help the selection of more effective preventative measures in the fight against tuberculosis in the complicated epidemic situation in Ukraine”.

Major revisions:

1. Introduction:

1.1 I would add:

1.1.1 some epidemiological data about the global TB epidemic, including drug-resistant forms;


1.1.3 the last TB prevalence/incidence data in Ukraine, or a bibliographic reference about that.

2. Experimental, Sampling:
2.1 I would move “Statistical analysis” paragraph after “RFLP-typing” one.
2.2 Does the Centralized Bacteriological Laboratory of SC ATD No. 1 perform quality controls regularly? Please specify it in the paper;
2.3 Reference #10 refers to a local document, not accessible by international readers.

3. Results:

3.1 I would maintain the paragraphs’ order as the previous section: 1. VNTR-typing, 2. RFLP-typing, 3. Analysis of drug resistance, 5. Determination of mutations associated with resistance to rifampicin and isoniazid, 6. Analysis of the correlation between multiple drug resistance and genotype of the isolates.

3.2 Please verify if “Hudson-Guenther discrimination index” is right. Consider “Hunter-Gaston discrimination index”.

Minor revisions:

4.1 Pages 1, 2, 7, 9, 12 and 14: What’s the role of “JCH” notes?
4.2 Page 2, line 12: Add , after “with the development of resistance to rifampicin”
4.3 Page 2, line 14: Change ; with , after “(12.5%)”
4.4 Page 6, 11th line: Remove . from the title
4.5 Page 6, 7th line from bottom: Change ; with : after “consisting of”
4.6 Page 6, last line: Change “1-hr” with “1-hour”
4.7 Page 7, 5th line: Add . at the end of the line
4.8 Page 7, 9th line: Insert 65° , not 650
4.8.1 Page 7, 9th line: Change “2 h” with “2 hours”.
4.9 Page 8, 1st line: Is the character format ok?
4.9.1 Page 8, 1st line: Remove . from the title
4.10 Page 8, 7th line from the bottom: Remove . from the title
4.11 Page 8, last line: Please note that the right acronym is not “UPBMA”, but “UPGMA”
4.12 Page 9, 2nd line from the bottom: Change “figure2” with “figure 2”
4.13 Page 10, 7th line from the bottom: Change “Spearmen correlation coefficient” with “Spearman correlation coefficient”
4.14 Page 12, 14th line: Define MDR (refer to WHO definition)
4.15 Page 12, last line: Change “Nontheless” with “Nonetheless”

**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