

Review of: "The Rural-Urban Divide: Insights from Immuno-Genetic Profiles and Implications for Health"

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Potential competing interests: No potential competing interests to declare.

This is an interesting study on the comparison of urban and rural populations of eastern Sudan in relation to health and disease. However, I think that there are not enough explanations of the methods employed or what they wanted to show.

General

Please add a table about the 168 SNPs: for each targeted gene (or group of genes), give the probable role relative to your study and indicate the number of SNPs.

In the mat and meth section, the specific methods are not described sufficiently.

The results are not sufficiently commented on, and the legends of figures are not self-explanatory.

The discussion is interesting. In conclusion, I would say a major revision is needed for this manuscript to reach the scientific level of Qeios.

Specific remarks

Italicize the Latin names.

Introduction § 2. malaria candidate genes: candidate genes associated with malaria

Before last §, reference: article on the sociobiological: reference missing

Mat and method

Study population

...controls consisting of 60 supposedly immunologically naïve samples for infectious diseases. From what population were these 60 individuals taken? In the results section, you mention the genome database, predominantly urban. Please give more information.

Expression analysis: how many, and which are the chosen housekeeping genes?

Online program on the website... The URL given is too vague; please be more specific. I was lost.

Immunoglobulin E (IgE) Level Estimation. Please give information on the ELISA kit supplier.

Statistics and software?

Results

Helminthic infections are also prevalent. What do you mean by "also"?

H. nana. Please write the full name of the genus.

About IgE, you mention the significance of tests. Please add in the material and methods section what statistical tests were used.

Figure 1. One digit after the decimal point is sufficient.

Genotype analysis. Please write Hardy-Weinberg equilibrium in full on the first citation.

Add in the Mat and Meth section the statistical test used for HWE departure.

The results of the tests in the 2 first columns are p-values? Why distinguish NS and a p-value $>.10$, for example? In the 3rd column, this is the test of association between rural and urban samples? In the Case column, I only found 3 SNPs in departure from HWE in table 1, 4 in table 2. Please explain.

Figure 2. What are R.F., T.reg, and Other?

Please move some sentences of the legends into the comments of the figure.

Gene expression profile

What are the 10 genes?

Figure 3. Please add to the legend: K1-K22: Koka populations; S1-S14: Salala populations; C1-C16: urban populations.

Discussion

Interestingly, it is recorded more frequently in controls than cases. Please add this information first in the result section.