

Interactive comment on “Comparative assessment of ecotoxicity of urban aerosol” by B. Turóczy et al.

Anonymous Referee #2

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This paper presents toxicity study of ambient PM₁₀ collected in the summer and winter in Budapest. The toxicity of PM is an important topic. The measurements appear to be well performed and clearly discussed. I have some concerns about interpretation of the results in the literature. In my view the paper tries to draw too many broad conclusions about the significance of the work.

There has been a lot of research published on both the chronic and acute health effects of PM pollution. This prior research has utilized both epidemiological and toxicological approaches. This manuscript does not cite this literature and the authors make statements (e.g. in abstract “the potential acute effects of PM_{2.5}/PM₁₀ have never been assessed for lack of adequate methodology”) that are factually incorrect. It suggests a general lack of awareness of the state of the field. There has been a lot of closely related work in this area; maybe not with this specific assay but with what I would consider similar methods dithiothreitol (DTT) assay, ROS, etc..

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What is the relationship between the proposed assay and human health and other toxicology measures? The paper often seems to take the view that their assay is the ultimate indicator (e.g. page 8539 line 25). In reality there are many toxicology tests and my read of the literature is that they provide different answers about what components of PM (diesel versus biomass smoke, fresh versus aged, etc.) is the problem. Of course then there is the additional challenge of extrapolating results from these tests to human health. The paper must discuss these issues and provide a more balanced (and limited) discussion of potential conclusions from this work.

Page 8540 line 18 – “this highly unfavourable effect has never been considered” In the US there is a daily standard that targets the high pollution episodes raised by this concern.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 8533, 2012.