Reviewer's report

Title: Immunity status of adults and children against poliomyelitis virus type 1 strains CHAT and Sabin (LSc-2ab) in Germany

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Reviewer: javier martin

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In this paper, the authors describe differences in neutralising titres against Sabin 1 and CHAT poliovirus strains found in a collection in human sera. The results indicate that immunisation with OPV induces a lower immune response against CHAT than against Sabin 1 whereas immunisation with IPV results in similar neutralisation titres against both strains. However, this conclusion has to be drawn with some precaution since the study does not include similar subject groups: OPV for adults (and a very heterogeneous group in terms of possible vaccination history) versus IPV for children. These possible limitations of the study should be mentioned in the text. I strongly agree that CHAT should not be used for any standard laboratory assays. It is not a fully attenuated strain and it is not fully standardised. Sabin 1 vaccine seed material used for OPV production that have passed the required quality control tests should be the only poliovirus strain used in laboratory virucidal assays until an alternative enterovirus standard is identified and established. The use of the CHAT strain would not comply to current requirements for the containment of poliovirus recommended by WHO. The manuscript would benefit from an expanded discussion on the amino acid sequence differences at antigenic sites between Sabin 1, CHAT and Mahoney strains that can, at least in part, explain the results obtained.

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: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests