Reviewer's report

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

Version: 2 Date: 29 June 2010

Reviewer: Bonnet marie Claude

Reviewer's report:

Minor essential revisions

- Abstract, results, 1st sentence (line 48): "...adults with a complete series of OPV vaccination" is in contradiction with the description of adults in section material and methods (line 126-134)

- Introduction 2nd sentence before the end (line 116) typo error "then" to be replaced by "than"

- Material and methods, serum samples, adults (line 126 to 138): this hard to read and to understand, a schematic representation of the population and their polio vaccination history would help

- Material and methods, serum samples, adults (line 137): " Another six paired sera were collected..." is in contradiction with the 9 subjects presented in table 3

- Material and methods, serum samples, children (line140): "...who had been vaccinated with IPV". Do you have proof of vaccination? Number of doses received?

- Material and methods, microneutralisation assay, mid of paragraph (line163) typo error "Reciprocal"

- Results, poliovirus neutralising antibodies in adults, 1st paragraph.(line 201): "In 12 sera, ...fivefold and more lower..." according to table 1 it is "In 13 sera..."

- Results, poliovirus neutralising antibodies in adults, 1st paragraph.(line 202): "In seven sera, ...even less than 8." according to table 1 it is "In 8 sera..."

- Results, poliovirus neutralising antibodies in adults, 2nd paragraph.(line 208): "(Table 1, no 28 and 34)" according to table 1 for subject 28 it is not a 2 fold

- Results, poliovirus neutralising antibodies in adults, 4th paragraph.(line 216):"the paired sera were collected and tested repeatedly": this is not clear for me

- Results, poliovirus neutralising antibodies after history of IPV in children (line 234 typo error Chat and Sabin

- Discussion 2nd paragraph before the end (line 287) "If it is not possible to avoid the use of CHAT.." Why ? is it possible to consider the benefit/risk of using CHAT?

- Discussion: the authors could try to propose some virological arguments to explain why the OPV Sabin strain-induced Neut Ab are more neutralizing the
Sabin strains than the CHAT stains (which is closer to wild type strains than the Sabin strains). The antigenic differences expressed by these strains as explored by investigators at NIBSC for example could provide some supporting evidences.

-14- The authors could discuss and exploit the data published by K. Chumakov from CBER/FDA about the differences of the paratope profiles of the Ab induced by OPV and IPV.

-15- figure 1 and figure 2: what kind of graphical representation is used? does the box represent some percentiles?

-16- Table 1, title: complete the information"...in 41 adults immunized totally or partially with OPV."

-17- Table 1: "In sera from No 19 to 39...fourfold and less." should be replaced by "In sera from No 22 to 41...fourfold and less."

-18- Table 2, title: "....with OPV prehistory before and after IPV booster." should be replaced by another sentence adding the following information: low antibody titers post OPV and the information regarding the post IPV testing which is performed 4 weeks after IPV booster.

-19- Table 3: missing information in column Ration for Lab Nr2 lines for subjects 21 and 24b

-20- Table 4 title: replace " ...strains in children." by " ...strains in 28 children immunized with IPV."

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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

Declaration of competing interests:

I am an employee of a pharmaceutical company producing polio vaccines: both OPV and IPV.