Author's response to reviews

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

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Dear Dr. Norton,

we would like you to consider the enclosed manuscript entitled: “Immunity status of adults and children against poliomyelitis virus type 1 strains CHAT and Sabin (LSc-2ab) in Germany.” by Maren Eggers, Elena Terletskaia-Ladwig, Holger F. Rabenau, Hans Wilhelm Doerr, Sabine Diedrich, Gisela Enders, and Martin Enders.

The European Committee for standardisation has suggested that the Sabin oral poliovirus vaccine type 1 strain (LSc-2ab) presently used for virucidal tests should be replaced by another attenuated vaccine poliovirus type 1 strain, CHAT. Both strains, CHAT and Sabin, were historically used as oral vaccines, but the Sabin type 1 strain was acknowledged to be more attenuated. For safety reasons, we have analyzed the antipoliomyelitis status of adults, including 12 laboratory workers, and children against poliovirus type 1 CHAT strain and poliovirus type 1 Sabin (LSc-2ab) strain. In this manuscript, we demonstrate that in adults the neutralisation activity against CHAT was significantly lower than against Sabin strain LSc-2ab (Wilcoxon signed-rank test P < 0.025). In 7 sera the reciprocal titres against CHAT were less than 8 although the GMT against Sabin varied between 11 to 54. This arises the question whether low antibody titres of 8-64 tested against the reference Sabin strain will protect against the Chat strain particularly with regard to a potential hazard for the laboratory staff. In contrast, sera of children with IPV vaccination history neutralised CHAT and Sabin 1 strains equally. Therefore, we strongly suggest that laboratory workers who were immunised with OPV receive a booster vaccination with IPV before handling CHAT in the laboratory.

Yours sincerely,

PD Dr. rer. nat. Maren Eggers