

# Poliovirus Neutralization Test with Poliovirus Pseudovirus To Measure Neutralizing Antibody in Humans

We complement Arita et al. (1) for their development of a safe, simple, and rapid test, employing poliovirus pseudovirus (generating luciferase signals) instead of the wild poliovirus, to measure the poliovirus neutralizing antibody titer in human serum. Apart from the end game of the global poliomyelitis eradication program, poliovirus pseudovirus technology (1) would be advantageous in the surveillance of cohorts of children and adults rendered poliovirus susceptible after therapeutic interventions for malignancy or organ transplants.

Some children and adults under chemotherapy regimens after organ transplants, as well as those infected with human immunodeficiency virus, constitute cohorts lacking poliovirus neutralizing antibodies (3). Cytostatic therapy for acute lymphocytic leukemia in children results in a temporary reduction of specific antibody levels. Both the reduced and standard chemotherapy regimens for acute childhood lymphoblastic leukemia in Utrecht, Netherlands, were accompanied by decreased antibody levels against vaccine-preventable diseases (5).

During future fine-tuning of the threshold values for protective antibody against the three poliovirus serotypes, it would be desirable to express poliovirus neutralizing titer obtained with pseudovirus technology (1) in international units rather than an arbitrary dilution figure. Comparison of inter- and intralaboratory serologic data would be more explicit using international units. Rather than an arbitrary dilution figure, the antibody content would be more explicit in international units. Serologic data on representative post-oral-poliovirus-vaccine sera from Germany were expressed in such units (2). Furthermore, protective neutralizing antibody titers for three polioviruses in 1,133 individuals older than 2 years in mainland Portugal were also expressed in international units (4).

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