In Response

Stability of Zika Virus Antibodies in Specimens from a Retrospective Serological Study

Dear Sir,

We would like to respond to the letter by Zhang and others regarding our study published in the *American Journal of Tropical Medicine and Hygiene*. Our serum samples were all stored in annually calibrated –80°C freezers. The samples were only thawed once. In general, antibodies are known to remain stable in frozen storage over lengthy periods. There are numerous publications regarding antibody stability during storage, ^{2–6} and we believe that all antibodies, including antibodies against Zika virus, will remain stable during storage.

Our study also re-assayed the presence of anti-dengue IgG antibodies in the samples. In our previous study,⁷ we measured dengue IgG antibody using indirect ELISA, and in the current study¹ we tested for antibodies in the same samples using a plaque reduction neutralization test. Overall good concordance of results between the two methods was observed (not shown), supporting the stability of antibodies in our samples.

The characterization of anti-Zika virus antibody stability during storage may be useful, but this was not the focus of our study.

R. Tedjo Sasmono
Edison Johar
Benediktus Yohan
Chairin Nisa Ma'roef
Amin Soebandrio
Khin SA Myint
Eijkman Institute for Molecular Biology
Jakarta, Indonesia

E-mails: sasmono@eijkman.go.id, edisonjohar@eijkman.go.id, yohan@eijkman.go.id, nami@eijkman.go.id, aminsoebandrio@eijkman.go.id, and myint@eijkman.go.id

PAUL PRONYK
UNICEF Indonesia
Jakarta, Indonesia
E-mail: ppronyk@unicef.org

SRI REZEKI HADINEGORO
Cipto Mangunkusumo Hospital
Universitas Indonesia Jakarta, Indonesia
E-mail: shadinegoro46@gmail.com

ELIZABETH JANE SOEPARDI Ministry of Health of the Republic of Indonesia Jakarta, Indonesia E-mail: ejanesoepardi@gmail.com

ALAIN BOUCKENOOGHE Sanofi Pasteur Lyon, Rhone-Alpes, France E-mail: alainbouck@gmail.com

WILLIAM HAWLEY
Centers for Disease Control and Prevention
Atlanta, Georgia
E-mail: byh0@cdc.gov

RONALD ROSENBERG
ANN M. POWERS
Centers for Disease Control and Prevention
Fort Collins, Colorado
E-mails: dcx7@cdc.gov and ann.powers@cdc.hhs.gov

Published online July 26, 2021.

This is an open-access article distributed under the terms of the Creative Commons Attribution (CC-BY) License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

REFERENCES

- Sasmono RT et al., 2021. Spatiotemporal heterogeneity of Zika virus transmission in Indonesia: serosurveillance data from a pediatric population. Am J Trop Med Hyg 104: 2220–2223.
- 2. Johnson M, 2012. Antibody storage and antibody shelf life. *Materials Methods* 2: 120.
- 3. Argentieri MC et al., 2013. Antibodies are forever: a study using 12–26-year-old expired antibodies. *Histopathology* 63: 869–876.
- Castejon MJ, Yamashiro R, de Oliveira CC, Oliveira CFA, Ueda M, 2014. Stability of anti-HIV antibodies in serum samples stored for two to eighteen years periods. J Bras Patol Med Lab 50: 272–277.
- Woodrum D, French C, Shamel LB, 1996. Stability of free prostatespecific antigen in serum samples under a variety of sample collection and sample storage conditions. *Urology 48*: 33–39.
- Han Q, Li S, Fu B, Liu D, Wu M, Yang X, Cai G, Liu Z, Chen X, Zhu H, 2018. Stability of important antibodies for kidney disease: preanalytic methodological considerations. *PeerJ 6*: e5178.
- Prayitno A et al., 2017. Dengue seroprevalence and force of primary infection in a representative population of urban dwelling Indonesian children. PLoS Negl Trop Dis 11: e0005621.