

Supplementary Materials: Preclinical Evaluation of Chicken Egg Yolk Antibody (IgY) Anti-RBD Spike SARS-CoV-2 – A Candidate for Passive Immunization against COVID-19

Hendris Wongso ¹, Isa Mahendra ¹, Wyanda Arnafia ², Idar Idar ³, Muhammad Yusuf ^{4,5}, Arifudin Achmad ⁶, Holis A. Holik ⁷, Ahmad Kurniawan ¹, Iim Halimah ¹, Maula E. Sriyani ¹, Teguh H. A. Wibawa ¹, Muhamad B. Febrian ¹, Yanuar Setiadi ¹, Eva M. Widyasari ¹, Isti Daruwati ¹, Crhisterra E. Kusumaningrum ¹, Toto Subroto ^{4,5,*}

¹ Research and Technology Center for Applied Nuclear, National Research and Innovation Agency, Jl. Tamansari No. 71, Lb. Siliwangi, Coblong, Bandung 40132, Indonesia; hendriswongso@batan.go.id

² Veterinary Pharmaceutical Industry, PT. Tekad Mandiri Citra, Jl. Mekar Raya Kav. 9, Bandung 40614, Indonesia; wyandaa@gmail.com

³ Faculty of Pharmacy, Universitas Bhakti Kencana, Jl. Soekarno-Hatta No. 754, Bandung 40614, Indonesia; idar@bku.ac.id

⁴ Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jl Raya Bandung Sumedang Km 21, Jatinangor, Sumedang 45363, Indonesia; m.yusuf@unpad.ac.id

⁵ Research Center for Molecular Biotechnology and Bioinformatics, Universitas Padjadjaran, Jalan Singaperbangsa No. 2, Bandung 40132

⁶ Department of Nuclear Medicine and Molecular Theranostics, Faculty of Medicine, Universitas Padjadjaran/Hasan Sadikin General Hospital, Jl. Pasteur No. 38, Bandung 40161; a.achmad@unpad.ac.id

⁷ Department of Pharmaceutical Analysis and Medicinal Chemistry, Faculty of Pharmacy, Universitas Padjadjaran, Jl. Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363; holis@unpad.ac.id

* Correspondence: t.subroto@unpad.ac.id

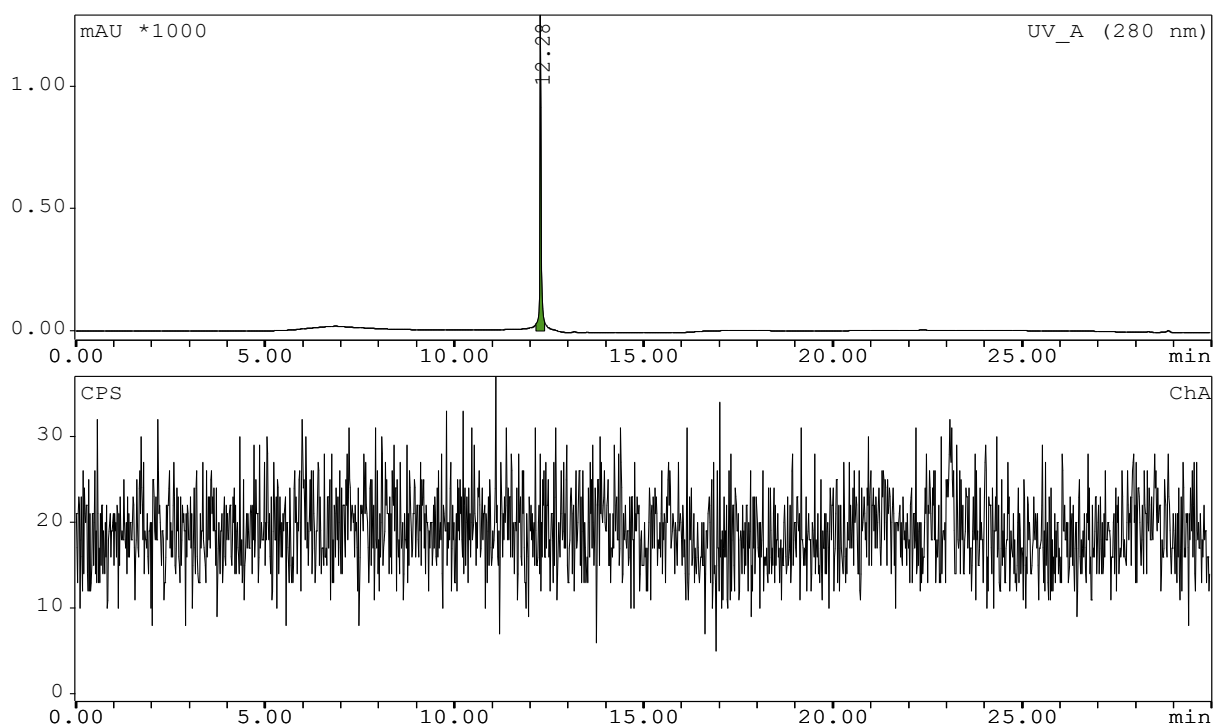
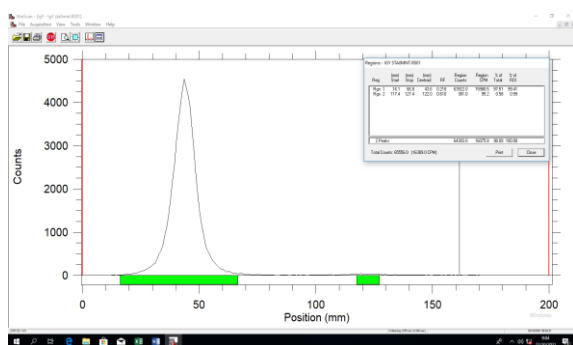
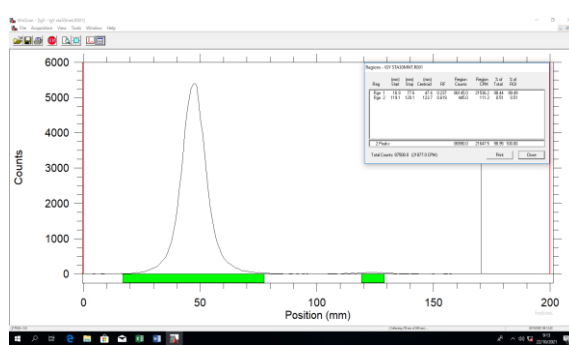


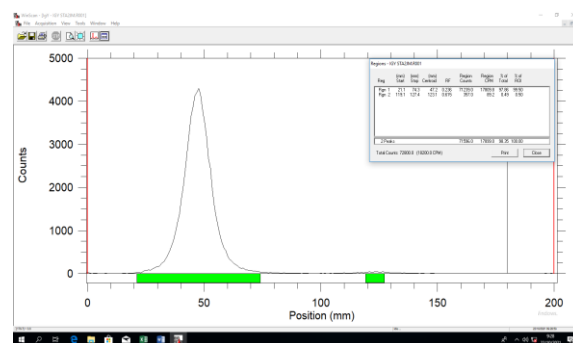
Figure S1. HPLC chromatogram of the standard IgY (RT = 12.28 min).



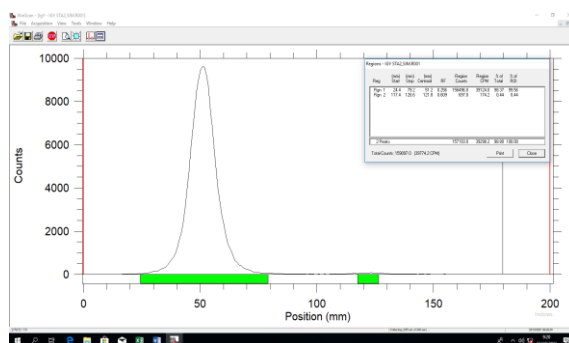
0 min



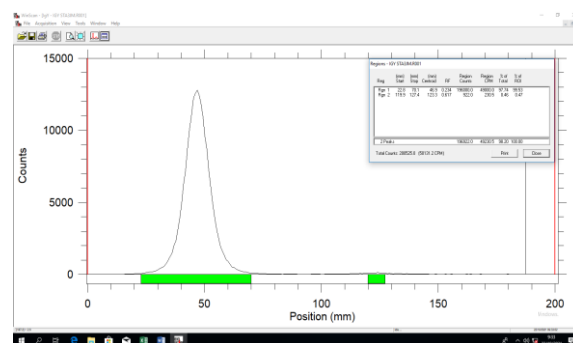
30 min



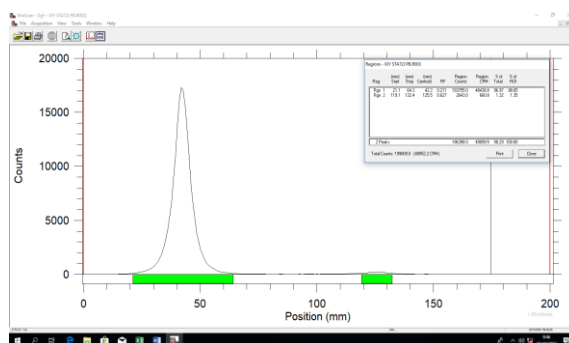
120 min



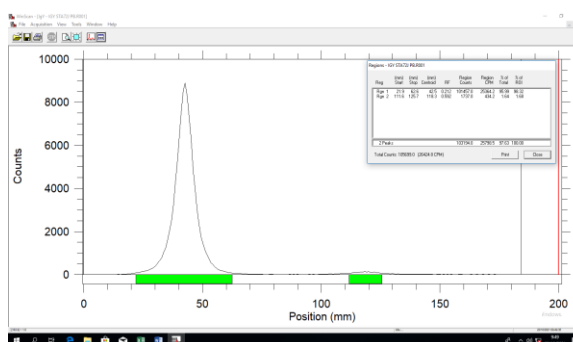
150 min



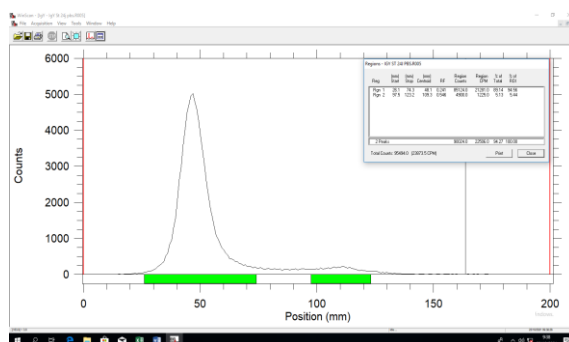
180 min



24 h



48 h



72 h

Figure S2. Representative TLC chromatograms for stability studies of $[^{125}\text{I}]$ -IgY anti-RBD spike SARS-CoV-2 in phosphate buffer saline (PBS) over 72 h.

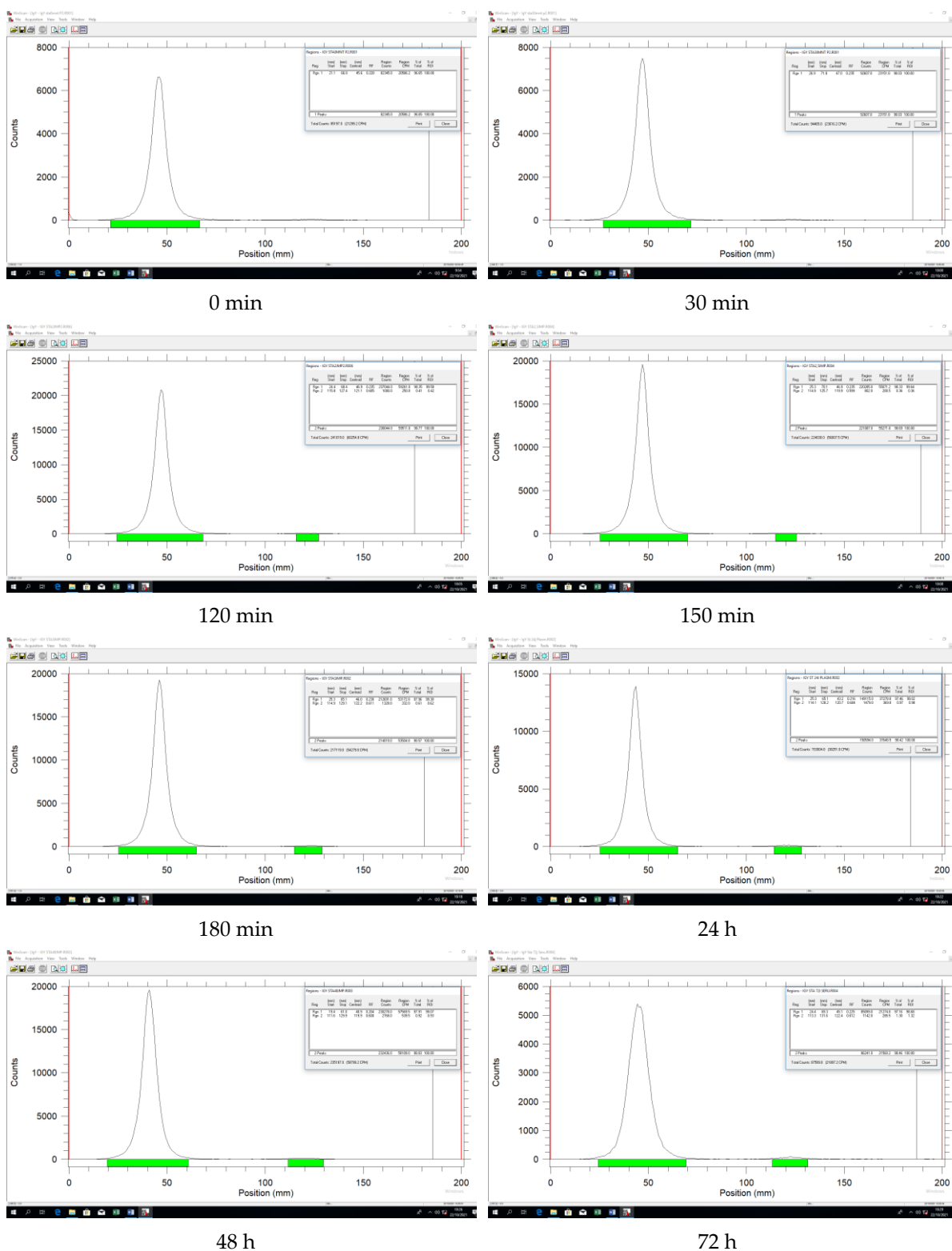


Figure S3. Representative TLC chromatograms for stability studies of $[^{131}\text{I}]$ -IgY anti-RBD spike SARS-CoV-2 in human serum over 72 h.

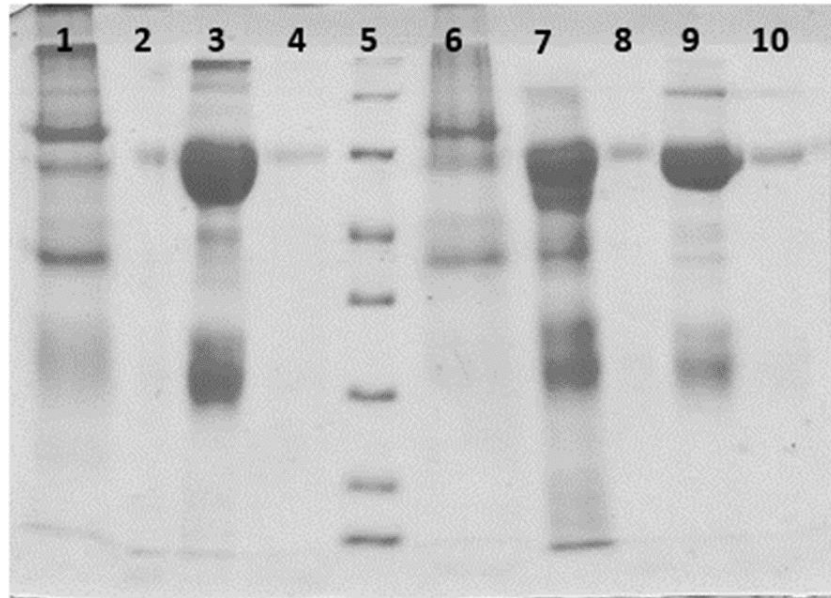


Figure S4. Identification and SDS-PAGE patterns of IgY anti-RBD spike SARS-CoV-2. Peak 1, gradient elution method (lane 1); Peak 3, gradient elution method (lane 2); ultrafiltrated peak 2, gradient elution method (lane 3); filtrate of ultrafiltrated peak 2, gradient elution method (lane 4); Protein marker (lane 5); peak 1, isocratic elution method (lane 6); peak 2, isocratic elution method (lane 7); peak 3, isocratic elution method (lane 8); ultrafiltrated of peak 2, isocratic elution method (lane 9); filtrate of peak 2, isocratic elution method.

Table S1. Lipophilicity (Log P) of [^{131}I]-IgY anti-RBD spike SARS-CoV-2.

Radioactivity (count per min)		P	Log P
Octanol	NaCl (water)		
706	66393	0.0047	-2.33
510	72839	0.0015	-2.82
472	49271	0.0015	-2.82
		Log P (mean) = -2.66 ± 0.28	