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Supplemental information

**Immunogenicity of a heterologous COVID-19 vaccine
after failed vaccination in a lymphoma patient**

Joshua A. Hill, Chaitra S. Ujjani, Alexander L. Greninger, Mazyar Shadman, and Ajay K. Gopal

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Table S1. Immunologic markers and SARS-CoV-2 antibody response in a 59-year-old man with lymphoplasmacytic lymphoma receiving a Bruton's tyrosine kinase inhibitors (BTKi)				
	Pre-vaccine 1 (BNT162b2 mRNA)	Pre-vaccine 2 (BNT162b2 mRNA)	Post-vaccine 2	Post-vaccine 3 (JNJ-78436735, viral vector)
Anti-SARS-CoV-2 spike protein total antibody titer (AU/mL)^a	NA	NA	<0.4	215
Anti-SARS-CoV-2 neutralizing antibody titer (ND₅₀)^a	NA	NA	NA	242
WBC (10³ cells/uL)^b	3.68	3.51		4.48
ALC (10³ cells/uL)^b	1.55	1.41		1.89
IgG (mg/dL)^c	587	NA		585
IgM (mg/dL)^c	180	NA		189
IgA (mg/dL)^c	94	NA		101
CD3+/CD4+ T cells (cells/uL)^d	NA	NA		1,039
CD3+/CD8+ T cells (cells/uL)^d	NA	NA		489
CD19+ B cells (cells/uL)^d	NA	NA		2

WBC, white blood cell count; ALC, absolute lymphocyte count; NA, not available.
^aTesting was performed 35 days after vaccine 2 and 18 days after vaccine 3. The ND₅₀ corresponds to the dilution of serum (1:242 in this case) resulting in 50% neutralization using a D614G SARS-CoV-2 spike protein pseudotyped lentivirus neutralization assay (Crawford et al., 2020). This is equivalent to an ND₅₀ of 51 IU/mL based on a conversion factor for the WHO international units.
^bWBC and ALC were collected 34 days prior to vaccine 1, 1 day prior to vaccine 2, and 12 days after vaccine 3. The lower limit of normal for WBC and ALC is 4.3 x 10³ and 1.0 x 10³ cells/uL, respectively.
^cTotal immunoglobulins were collected 58 days prior to vaccine 1 and 12 days after vaccine 3. The lower limits of normal for IgG, IgM, and IgA are 610, 40, and 84 mg/dL, respectively.
^dFlow cytometry analyses were performed on a whole blood sample obtained 21 days after vaccine 3. The lower limits of normal for CD4+ T cells, CD8+ T cells, and B cells are 730, 250, and 160 cells/uL, respectively.