

**Supplementary Table 1** Participant characteristics and sample collection information

Variable	BNT162b2 (n=52)
Age, years (median [IQR])	4 [32.3-54]
Female [Male]	46 [6]
Seropositivity to SARS-CoV-2 (Reactive [Non-reactive])	2 [50]
Blood sample collected post 1 <sup>st</sup> vaccine (Yes [No])	47 [5]
Blood sample collected post 2 <sup>nd</sup> vaccine (Yes [No])	18 [34]
Baseline stool samples collected (Yes [No])	48 [4]
Twelve-weeks post 1 <sup>st</sup> vaccine stool samples collected (Yes [No])	41 [11]
Matching baseline and twelve-week stool samples collected (Yes [No])	38 [14]
Dietary fibre grouping (Low [Moderate] High) (n=41)	13 [14] 14
Total dietary fibre intake, g/day (mean [SD]) (n=41)	24.7 [11.9]
Vegetarian (Yes [No]) (n=41)	4 [37]
Antibiotics taken within 9 months of collecting stool (Yes [No]) (n=41)	3 [38]
Significant* change in weight or food intake over the past year (Yes [No]) (n=41)	7 [34]

IQR – inter quartile range, SD – standard deviation. \* Significant body weight changes >10% weight gain or loss and significant changes in food intake included becoming vegetarian/vegan, stopped consuming gluten, dairy or sugar, increased fruit, or vegetable intake, etc.



**Supplementary Table 3** Equations used to calculate absolute (U/mL) and relative fractional avidity (%), and total absolute and relative fractional avidity indices

	Very low	Low	Medium	High	Very high
Absolute fractional avidity (U/mL)	$AFA_{vlo} = Y_0 - Y_{0.5}$	$AFA_{lo} = Y_{0.5} - Y_{0.75}$	$AFA_{med} = Y_{0.75} - Y_1$	$AFA_{hi} = Y_1 - Y_2$	$AFA_{vhi} = Y_2$
Total absolute fractional avidity index	$2 * AFA_{vhi} + 1 * AFA_{hi} + 0.25 * AFA_{med} + 0.25 * AFA_{lo} + 0.5 * AFA_{vlo}$				
Relative fractional avidity (%)	$RFA_{vlo} = \frac{AFA_{vlo}}{Y_0} * 100\%$	$RFA_{lo} = \frac{AFA_{lo}}{Y_0} * 100\%$	$RFA_{med} = \frac{AFA_{med}}{Y_0} * 100\%$	$RFA_{hi} = \frac{AFA_{hi}}{Y_0} * 100\%$	$RFA_{vhi} = \frac{AFA_{vhi}}{Y_0} * 100\%$
Total relative fractional avidity (TRFA)*	$TRFA = -0.533 * RFA_{vlo} + 0.0269 * RFA_{lo} + 0.477 * RFA_{med} + 0.492 * RFA_{hi} + 0.495 * RFA_{vhi}$				

AFA – absolute fractional avidity, RFA – relative fractional avidity

\*Based on eigenvalue plot loadings of each avidity for PC1 of all avidity data