Comparison of 50% plaque reduction neutralization antibody titres with ancestral virus, Omicron BA.1 and BA.2 in BNT162b2 and CoronaVac vaccine cohorts

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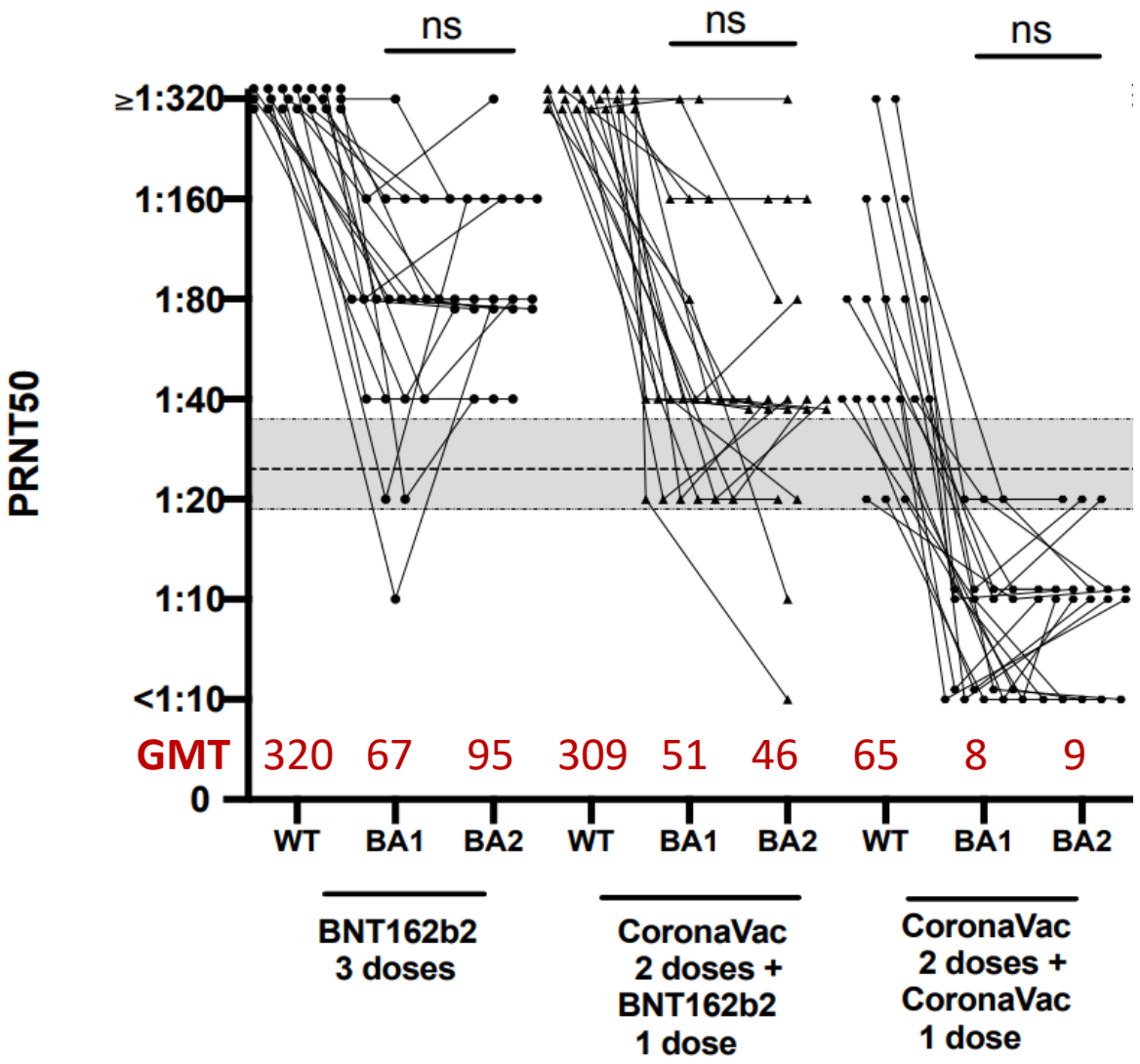
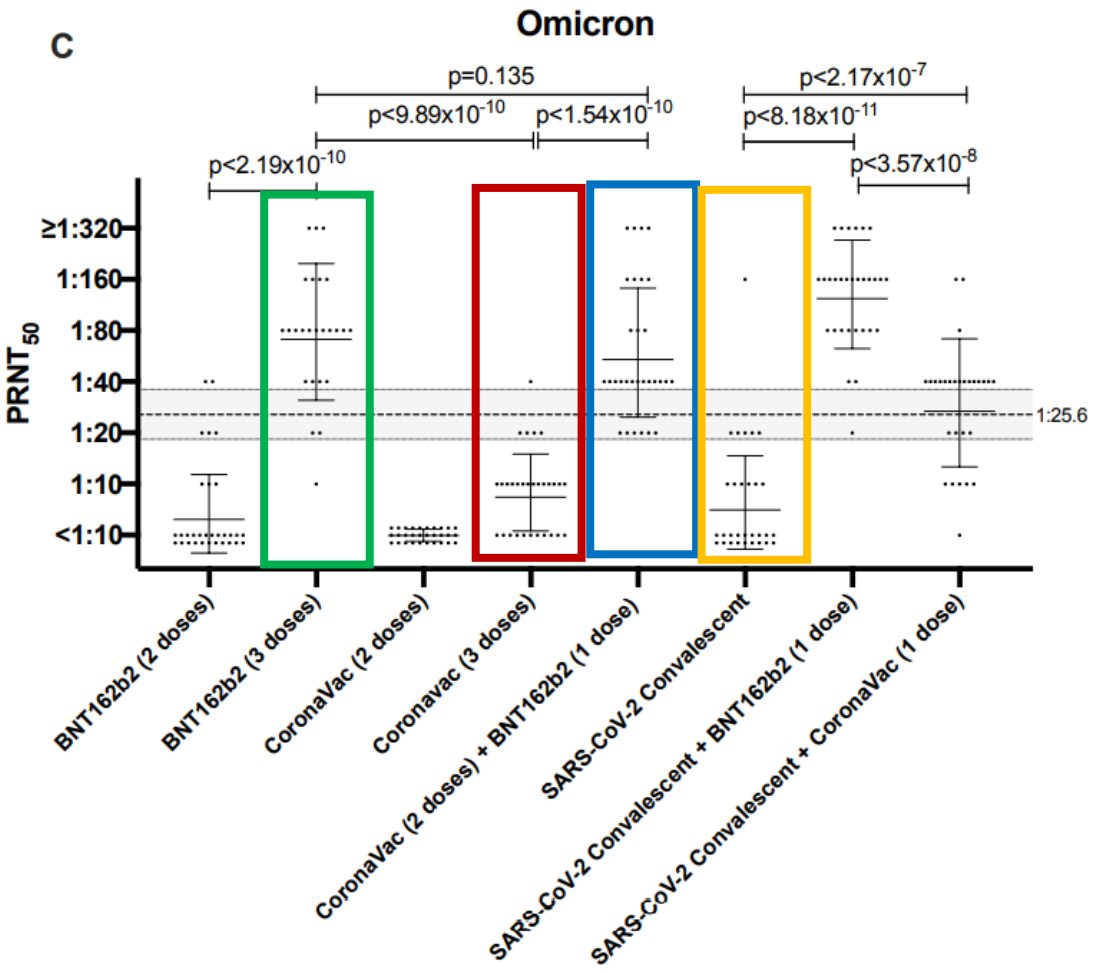
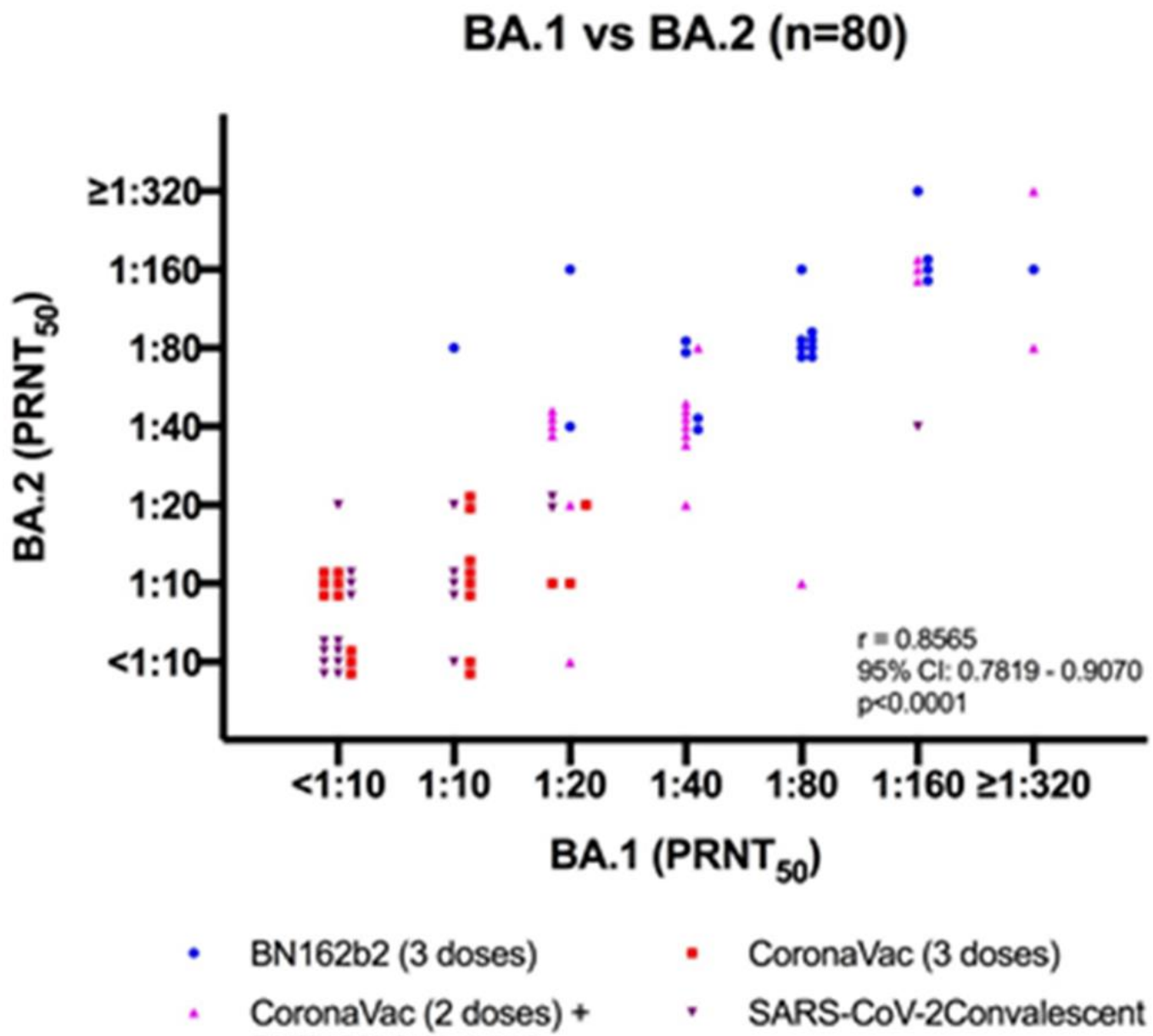
Comparison of plaque reduction neutralization test antibody titres to ancestral virus (WT), Omicron BA.1 and Omicron BA.2



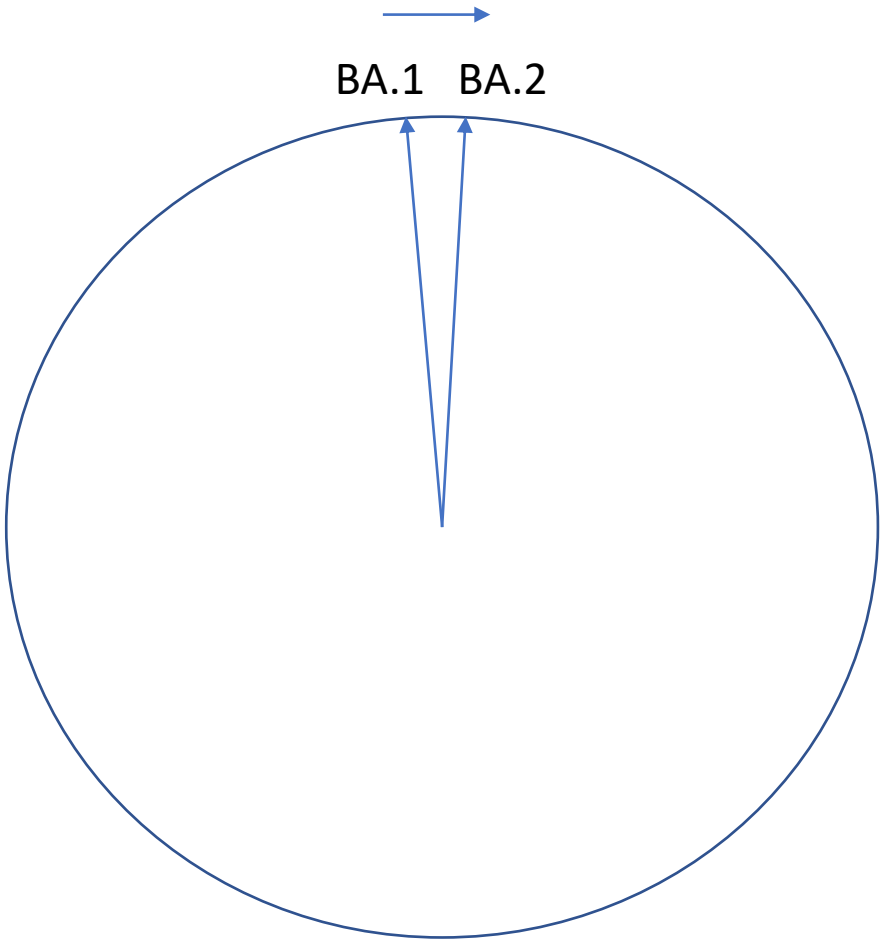
Comparison of BA.1 and BA.2 PRNT50 antibodies in different vaccine cohorts

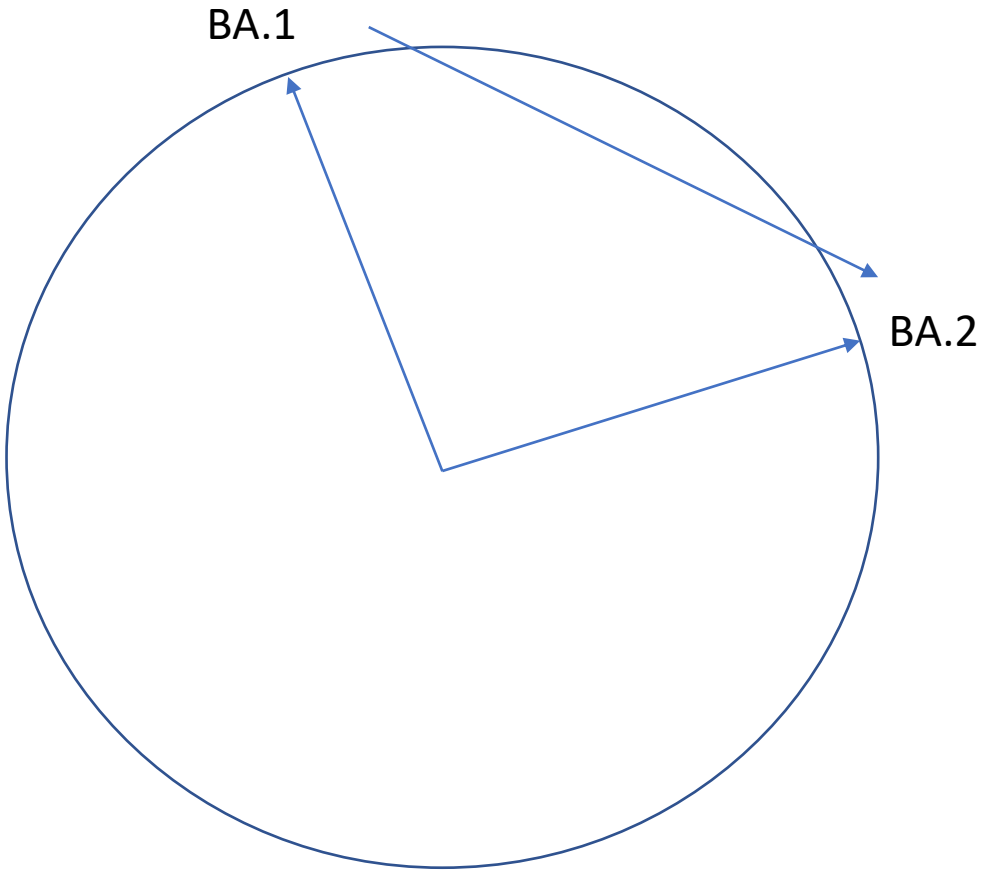
BA.1



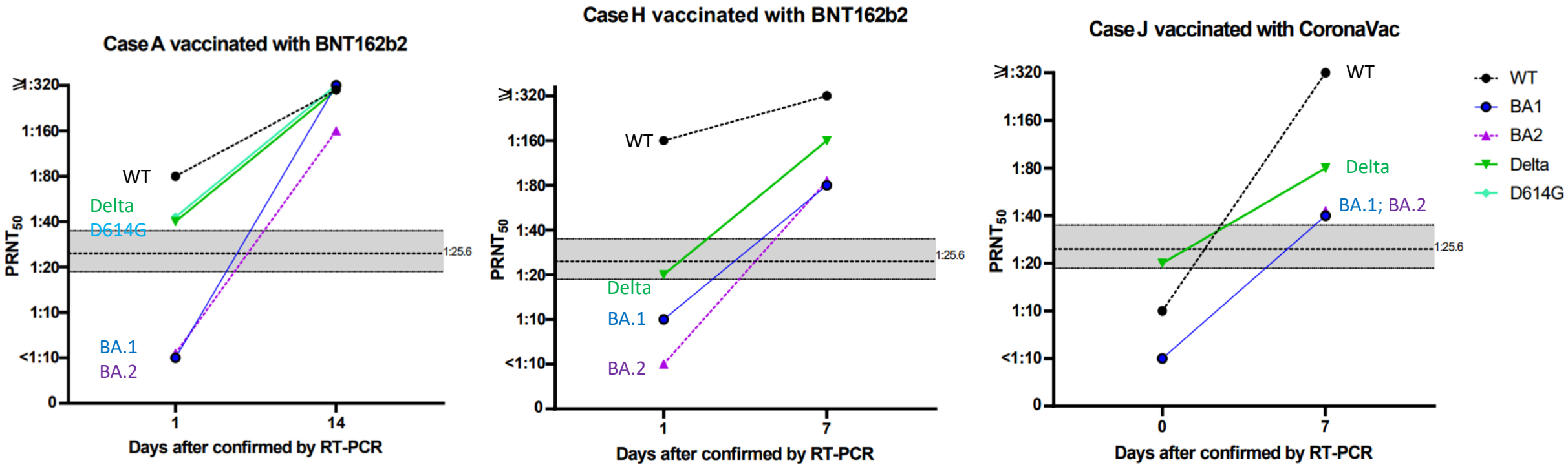

BA.1 vs BA.2 (n=80)
BA.2 (PRNT50)
≥1:320
1:160
1:80
1:40
1:20
1:10
<1:10
r = 0.8565
95% CI: 0.7819 - 0.9070
p<0.0001
<1:10
1:10
1:20
1:40
1:80
1:160
≥1:320
BA.1 (PRNT50)
BN162b2 (3 doses)
CoronaVac (3 doses)
CoronaVac (2 doses) + BNT162b2 (1 dose)
SARS-CoV-2Convalescent

Antigenic distance?

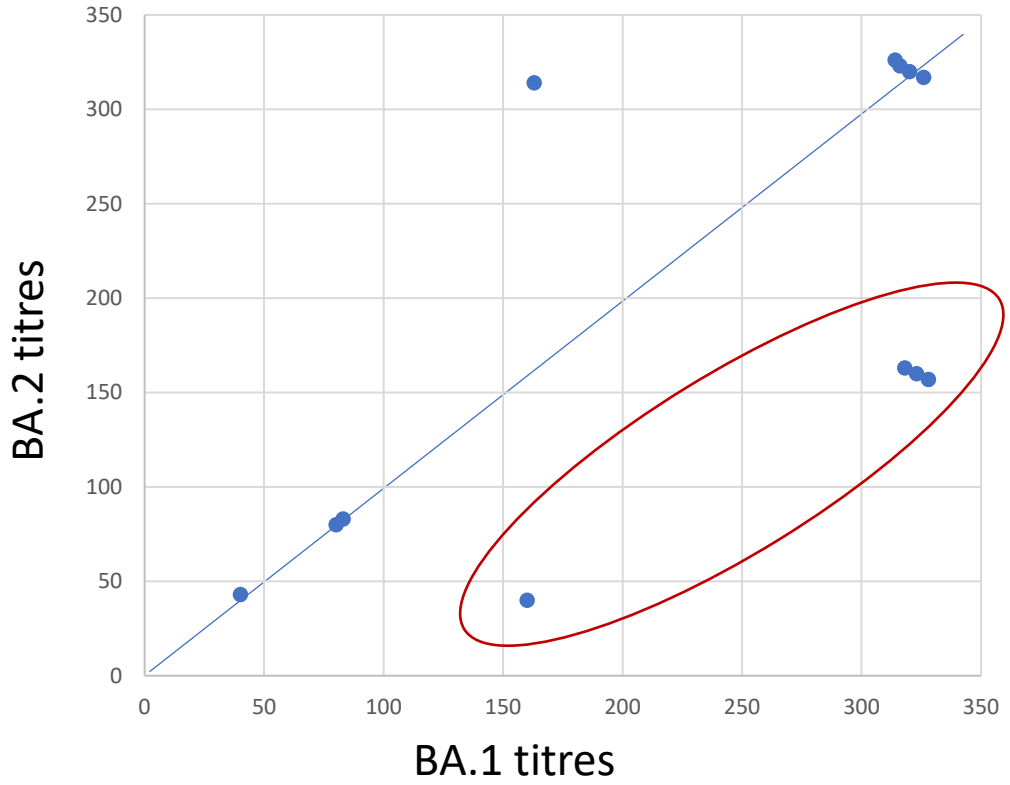




Omicron BA.1 breakthrough infections in vaccinated individuals: PRNT50 titres to WT, Delta, BA.1 and BA.2 viruses



12 convalescent Omicron BA.1 breakthrough infections in vaccinated individuals: PRNT50 antibody titres to BA.1 vs BA.2



GMT to

BA.1 - 190

BA.2 - 151

- Trend towards higher PRNT50 titres to homologous virus but not a major difference
- To map antigenic distance, ideally need sera from BA.1 or BA.2 infected people who have no prior vacccine

Conclusions

- Similar & substantial levels of reduction of PRNT50 neutralizing antibody titres to Omicron BA.1 or Omicron BA.2 infected individuals
- Three doses of BNT162b2 or two doses of CoronaVac followed by BNT162b2 vaccines elicit PRNT50 titres above protective thresholds at 1 month after third dose of vaccine
- Three doses of CoronaVac does not elicit protective levels of PRNT50 antibody vs BA.1 or BA.2 infections. But T cell immunity may provide protection vs severe disease.
- Past infection with SARS-CoV-2 does not elicit protective levels of PRNT50 antibody vs BA.1 or BA.2 infections, but T cell immunity may provide protection vs severe disease.
- A single dose of BNT162b2 in those with past COVID-19 infection elicits protective levels of PRNT50 antibody to BA.1 and BA.2
- Data on BA.1 published already *Cheung SMS et al Nature Medicine online*

Thank you