

Altered pathogenicity, transmissibility, and fitness of the SARS-CoV-2 Omicron (B.1.1.529) variant in the golden Syrian hamster model

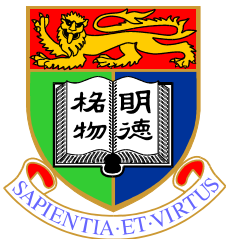
**WHO COVID-19 vaccines research:
What recent evidence do we have that omicron is evading immunity
and what are the implications?
14 February 2022 (13:00-17:15 CET)**

Jasper Fuk-Woo Chan

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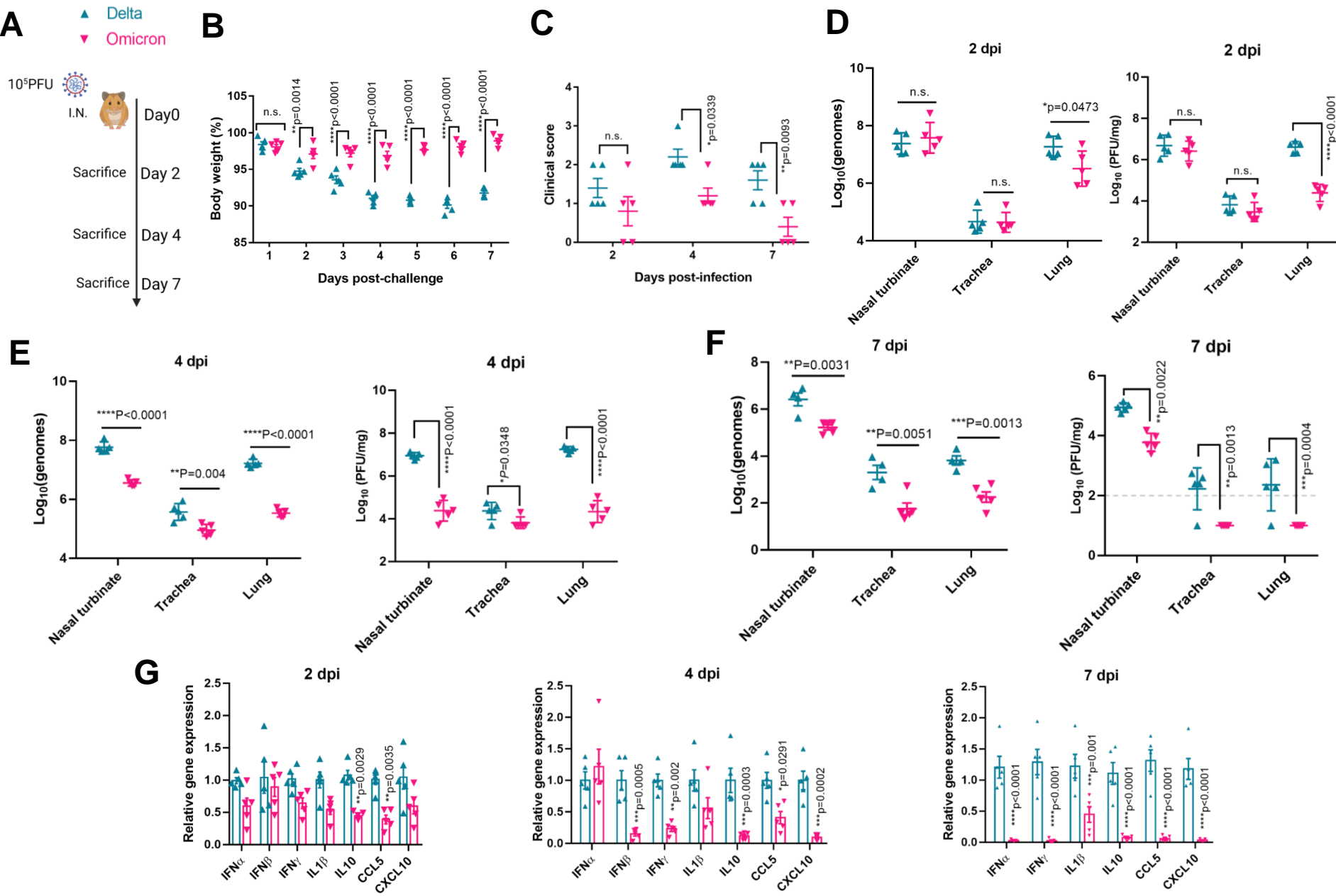
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Pathogenicity



Pathogenicity

nature

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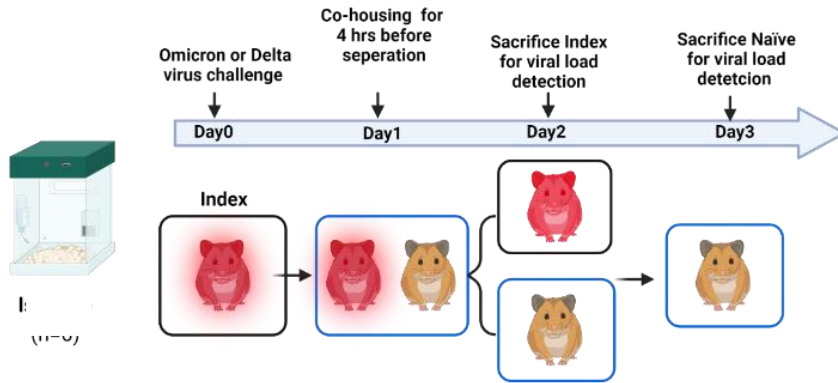
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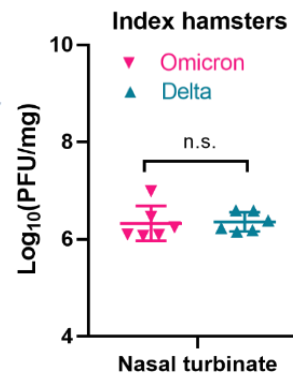
(Halfmann PJ et al. *Nature*. 2022)

Contact Transmission

A



B

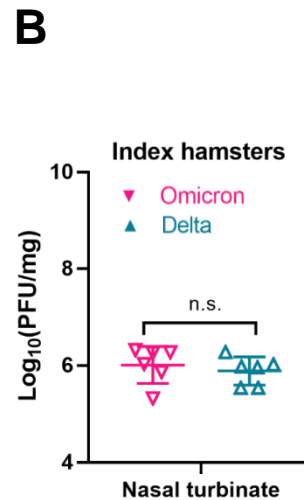
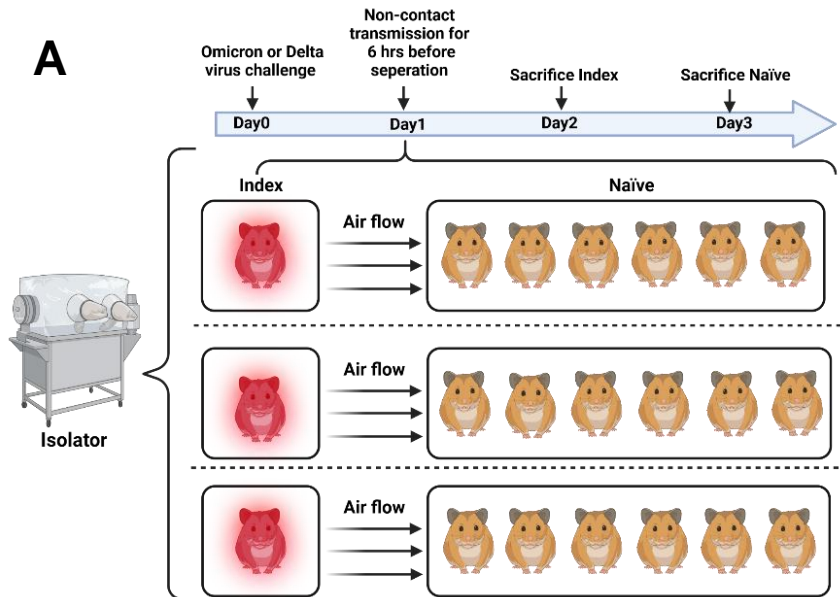


C

Exposed naïve hamsters	Omicron (infected / total)	Delta (infected / total)	<i>P</i> -value
Round 1	3/3 (100%)	3/3 (100%)	1.000
Round 2	3/3 (100%)	3/3 (100%)	1.000
Total	6/6 (100%)	6/6 (100%)	1.000

Both Delta & Omicron variants were highly transmissible through contact transmission

Non-contact Transmission

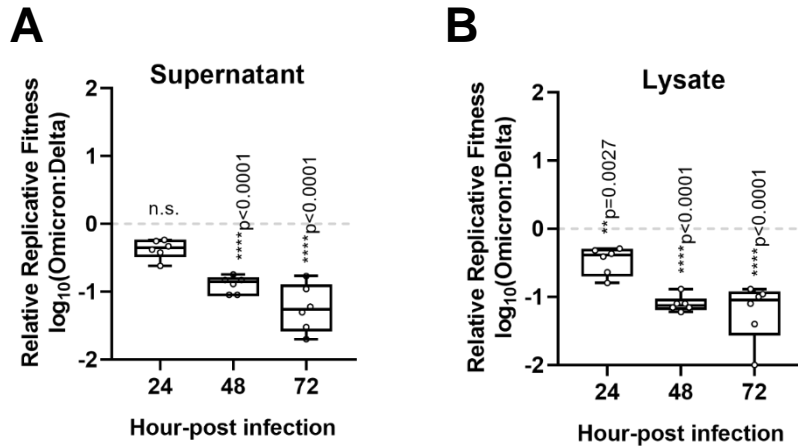


C

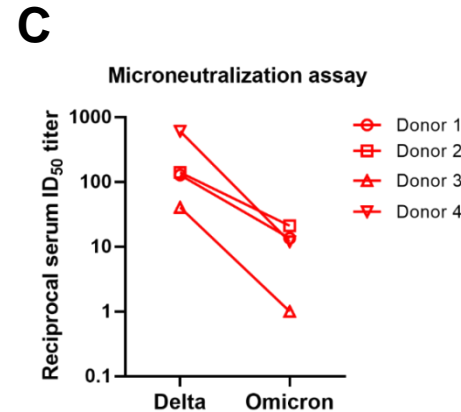
Exposed naïve hamsters	Omicron (infected / total)	Delta (infected / total)	<i>P</i> -value
Round 1	14/18 (77.8%)	11/18 (61.1%)	0.471
Round 2	16/18 (88.9%)	13/18 (72.2%)	0.402
Total	30/36 (83.3%)	24/36 (66.7%)	0.173

(About 15-20% higher than Delta)

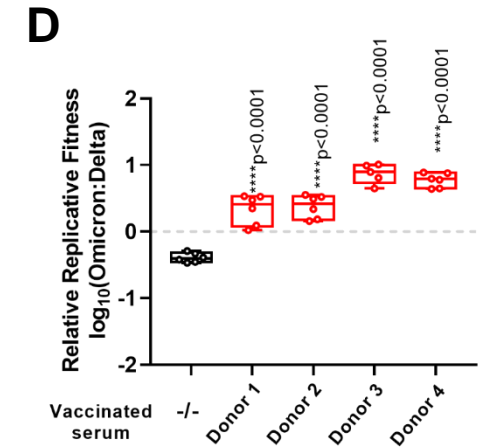
Virus Fitness



In vitro competition assay in Calu-3 cells
(Omicron:Delta = 1:1)
without vaccines' sera

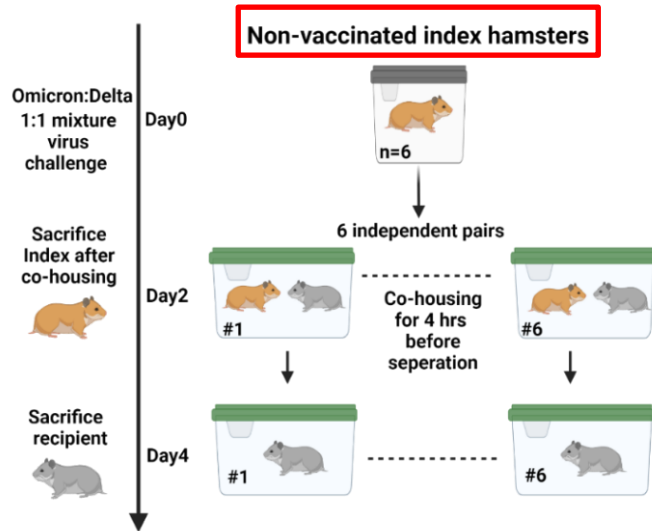


In vitro competition assay in Calu-3 cells
(Omicron:Delta = 1:1)
with (mRNA) vaccinees' sera

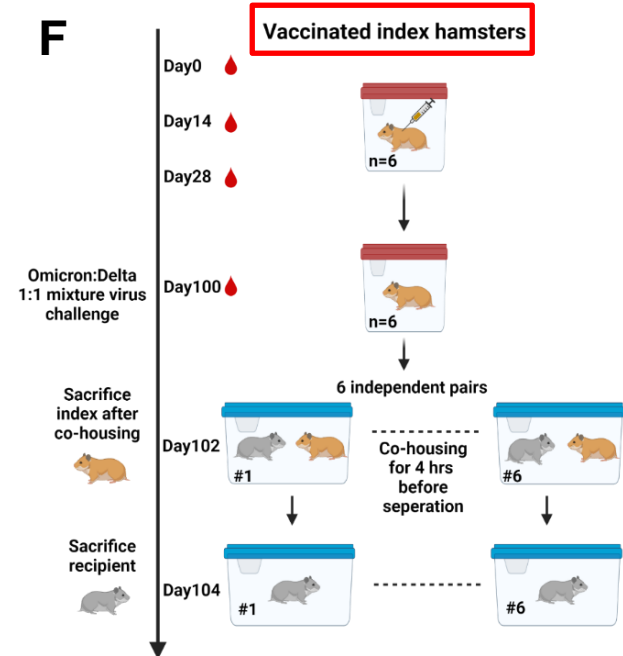


In Vivo Virus Fitness

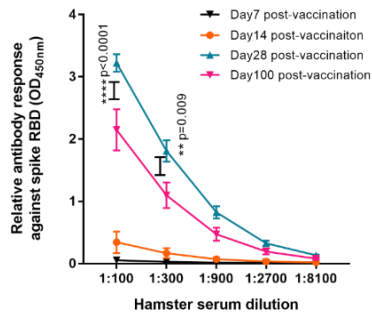
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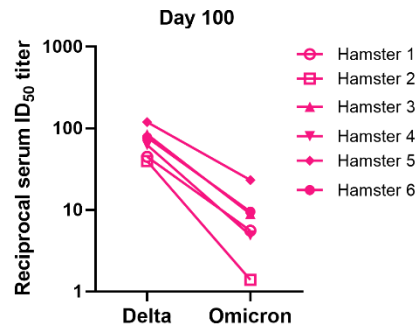
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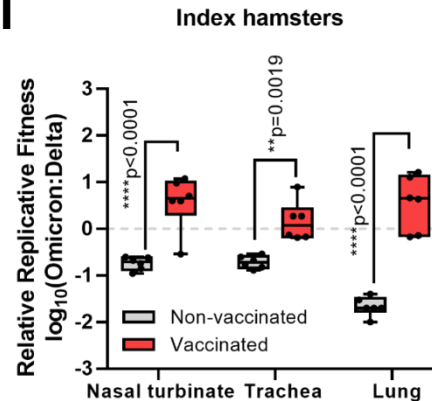
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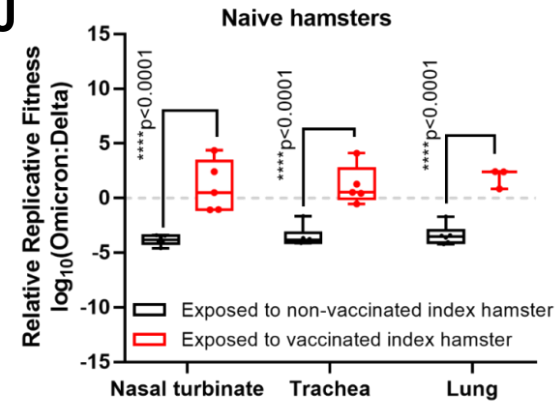
H



I



J



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