Twitter Thread by Dr B.

Dr B.
@P_J_Buckhaults

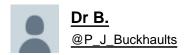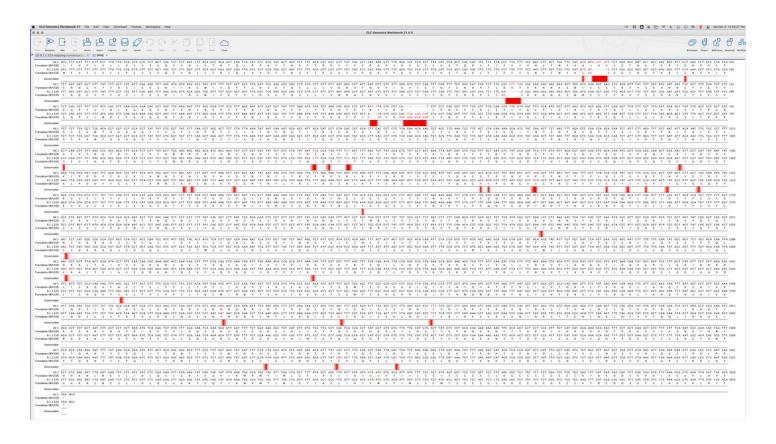**Omicrons (B.1.1.529) most recent common ancestor is AV.1. Relative to this MRCA, Omicron has 25 nonsynonymous and 1 synonymous mutation in Spike, and 13 nonsynonymous and 6 synonymous mutations in the entire rest of the genome. This is very strange & I don't understand.**

I have re-done the alignments and counting up of mutations, and it's even weirder than i first said.

34 discontinuous changes (that are likely independent events). only one of them is silent. the rest change amino acid. see attached pictures. to quote @K_G_Andersen this is inconsistent with expectations from standard evolutionary theory.

this is just bonkers. there should be a butt-tonne of other silent passenger mutations hitching a ride with nonsynonymous changes under positive selective pressure. i am not invoking a sinister lab engineering event here, just something important that i do not know.

Spike is 3819 coding nucleotides. It has 33 NS and 1 S changes. The neighboring ORF3A-E-M-ORF6-ORF7A-ORF8-N-ORF10 genes have 4000 coding nucleotides. They have eight NS and three S changes. Spike is smaller and has four times the NS changes.

GCT>GTT	ALA>VAL	NONSYNONYMOUS SUBSTITUTION	
ATA-CAT-GTC>ATC	ILE-HIS-VAL>ILE	DELETION OF HIS-VAL	
GGT>GAT	GLY>ASP	NONSYNONYMOUS SUBSTITUTION	
GAT-GTT-TAC > GAC	ASP-VAL-TYR>ASP	DELETION OF VAL-TYR	
AAT-TTA>ATA	ASN-LEU>ILE	DELETION OF ASN-LEU AND CHANGE TO ILE	
GAT>GAG-CCA-GAA-GAT	ASP>GLU-PRO-GLU-ASP	INSERTION OF GLU-PRO-GLU	
GGT>GAT	GLY>ASP	NONSYNONYMOUS SUBSTITUTION	
TCC>CTC	SER>LEU	SER-ALA-SER-PHE-SER>LEU-ALA-PRO-PHE-PHE	
TCA>CCA	SER>PRO	SER-ALA-SER-PHE-SER>LEU-ALA-PRO-PHE-PHE	
TCT>TTC	SER>PHE	SER-ALA-SER-PHE-SER>LEU-ALA-PRO-PHE-PHE	
AAG>AAT	LYS>ASN	NONSYNONYMOUS SUBSTITUTION	
AAG>AAT	LYS>ASN	NONSYNONYMOUS SUBSTITUTION	
AAT>AAG	ASN>LYS	NONSYNONYMOUS SUBSTITUTION	
GGT>AGT	GLY>SER	NONSYNONYMOUS SUBSTITUTION	
AGC>AAC	SER>ASN	NONSYNONYMOUS SUBSTITUTION	
ACA>AAA	THR>LYS	NONSYNONYMOUS SUBSTITUTION	
AAA>GCA	LYS>ALA	NONSYNONYMOUS SUBSTITUTION	
CAA>CGA	GLN>ARG	NONSYNONYMOUS SUBSTITUTION	
GGT>AGT	GLY>SER	NONSYNONYMOUS SUBSTITUTION	
CAA>CGA	GLN>ARG	NONSYNONYMOUS SUBSTITUTION	
AAT>TAT	ASN>TYR	NONSYNONYMOUS SUBSTITUTION	
TAC>CAC	TYR>HIS	NONSYNONYMOUS SUBSTITUTION	
ACA>AAA	THR>LYS	NONSYNONYMOUS SUBSTITUTION	
CAT>TAT	HIS>TYR	NONSYNONYMOUS SUBSTITUTION	
AAT>AAG	ASN>LYS	NONSYNONYMOUS SUBSTITUTION	
AAC>AAA	ASN>LYS	NONSYNONYMOUS SUBSTITUTION	
GAT>TAT	ASP>TYR	NONSYNONYMOUS SUBSTITUTION	
AAC>AAA	ASN>LYS	NONSYNONYMOUS SUBSTITUTION	
CAA>CAT	GLN>HIS	NONSYNONYMOUS SUBSTITUTION	
AAT>AAA	ASN>LYS	NONSYNONYMOUS SUBSTITUTION	
CTT>TTT	LEU>PHE	NONSYNONYMOUS SUBSTITUTION	
GTA>ATA	VAL>ILE	NONSYNONYMOUS SUBSTITUTION	
CAT>GAT	HIS>ASP	NONSYNONYMOUS SUBSTITUTION	
GAC>GAT	ASP>ASP	SYNONYMOUS SUBSTITUTION	
3819 CODING NUCLEOTIDES (SPIKE)			
34 CODING CHANGES			
33 NONSYNONYMOUS AND 1 SYNONYMOUS			