Supplementary Information	n						
[~] himeric viruses between I	Rocio and West Nile: the r	role for Rocio nrM-E proteins	s in virulence and inhibition of	interferon_a/ß signaling			
	Rocio and west func, the f		in virulence and inition of	interieron-u/p signaning			
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abaratary of Viralary Day	outmont of Clinical Analys	age Towigology and Food Spion	and School of Dharman soution S	nionaag of Dihairaa Drata University s	of Saa Daula, Dihairaa Drata, Saa D	aulo Drozil	
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These authors contributed ec							
These authors contributed e	equally and should be consid	dered as joint senior authors					
				DCV/WNV-prME and WNV/ROCV	-prME).		
			CV and respective chimeric virus				
				overed ROCV and ROCV/WNV-prM E, however, the predominant population		his is not a alveosulation site	
ne substitution, No9, in E g	ene denoted in olde contain					ins is not a grycosylation site.	
				ROCV			
С	prM	E	NS2A	NS3	NS4A	NS5	3' UTR
A111 (GCG) 98% G	N47K (AAT -> AAA) 99% A	N89 (A <u>A</u> C) 30% A	A66 (GCC) 98% C	S157S (TCC -> TCA) 97% A	A134A (GCC -> GCA) 96% A, 3% C	A71V (GCT -> GTT) 97% T, 2% G	Nt 27 (G -> A) 96% A
		$N89S (A\underline{A}C \rightarrow \underline{A}\underline{G}C) 68\% G$		H158S (CAC -> AGC) 97% A & 98% G		I123I (ATT -> ATC) 98% C	Nt 121 (A -> T) 96% T, 2% (
		Y235N (TAC -> AAC) 98% A V247A (GTT -> GCT) 98% C		S225T (AGT -> ACT) 98% C E575E (GAA -> GAG) 98% G		Q337Q (CAA -> CAG) 98% G A373V (GCG -> GTG) 96% T, 3% G	Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A
		E261A (GAA -> GCA) 98% C				F435C (TTT -> CTC) 97% C & 97% C	Nt 200 (T -> C) 99% C
		I264T (ATT -> ACT) 99% C				I452I (ATT -> ATC) 98% C	Nt 219 (A -> C) 99% C
		V265A (GTT -> GCT) 98% C L279L (TTA -> CTA) 99% C				T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	
						1001K (CCG -> CGG) 37/0 G	
		K409K (AAA -> AAG) 98% G					
		K409K (AAA -> AAG) 98% G					
	M			ROCV/WNV-prME	NCAA	NICE	21 1/TD
C A111S (GCG -> TCG) 70% T. 27% G	prM	E	NS2A	NS3	NS4A A134A (GCC -> GCA) 99% A	NS5 A71V (GCT -> GTT) 97% T	3' UTR Nt 27 (G -> A) 99% A
-	prM			▲	NS4A A134A (GCC -> GCA) 99% A	NS5 A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C	3' UTR Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T
-	prM		NS2A	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C		A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A
-	prM		NS2A	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G		A71V (GCT -> GTT) 97% T 1123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A
	prM		NS2A	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C		A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A
	prM		NS2A	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C		A71V (GCT -> GTT) 97% T 1123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 1452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C
-	prM		NS2A	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C		A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C
-	prM		NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C		A71V (GCT -> GTT) 97% T 1123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 1452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C
-	prM		NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G		A71V (GCT -> GTT) 97% T 1123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 1452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C
A111S (GCG -> TCG) 70% T, 27% G		E	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е _	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
1111S (GCG -> TCG) 70% T, 27% G	prM	Е 	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
1111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
1111S (GCG -> TCG) 70% T, 27% G	prM	Е 	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
1111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
1111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A1111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A1111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C
A111S (GCG -> TCG) 70% T, 27% G	prM	Е	NS2A A66A (GCC -> GCT) 62% T, 36% C	NS3 S157S (TCC -> TCA) 97% A H158S (CAC -> AGC) 98% A & 99% G S225T (AGT -> ACT) 99% C E575E (GAA -> GAG) 99% G WNV/ROCV-prME	A134A (GCC -> GCA) 99% A	A71V (GCT -> GTT) 97% T I123I (ATT -> ATC) 99% C Q337Q (CAA -> CAG) 99% G A373V (GCG -> GTG) 96% T F435C (TTT -> CTC) 98% C1 & 99% C3 I452I (ATT -> ATC) 98% C T660S (ACT -> AGT) 99% G P661R (CCG -> CGG) 99% G	Nt 27 (G -> A) 99% A Nt 121 (A -> T) 98% T Nt 141 (T -> A) 99% A Nt 194 (T -> A) 99% A Nt 200 (T -> C) 99% C Nt 219 (A -> C) 98% C