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**Supplemental information**

**Coupling of N7-methyltransferase and 3'-5'  
exoribonuclease with SARS-CoV-2 polymerase  
reveals mechanisms for capping and proofreading**

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## Supplementary Tables

**Table S1. Cryo-EM data statistics (Related to Figure 1).**

	cap(0)-RTC		
	dCap(0)-RTC	mCap(0)-RTC	partial nsp10/14
<b>Data collection and processing</b>			
Magnification	165,000	165,000	165,000
Voltage (kV)	300	300	300
Electron exposure (e <sup>-</sup> /Å <sup>2</sup> )	60	60	60
Defocus range (μm)	-1.0 to -1.8	-1.0 to -1.8	-1.0 to -1.8
Pixel size (Å)	0.82	0.82	0.82
Symmetry imposed	C1	C1	C1
Initial particle images (no.)	887,588	887,588	340,713
Final particle images (no.)	135,807	80,256	194,659
Map resolution (Å)	3.35	3.78	7.87
FSC threshold			
Map resolution range (Å)	3.35 – 9.0	3.78 – 9.0	7.0 – 15.0
<b>Refinement</b>			
Model resolution (Å)	3.35	3.78	N/A
FSC threshold	0.143	0.143	N/A
Model resolution range (Å)	∞ to 3.0	∞ to 3.0	N/A
Map sharpening <i>B</i> factor (Å <sup>2</sup> )	-67.7	-67.7	N/A
Model composition			
Non-hydrogen atoms	54,519	27,184	N/A
Protein residues	6644	3330	N/A
Ligands	29	13	N/A
<i>B</i> factors (Å <sup>2</sup> )			
Protein	17.16	63.45	N/A
Ligand	67.39	85.45	N/A
R.m.s. deviations			
Bond lengths (Å)	0.007	0.014	N/A
Bond angles (°)	1.504	1.234	N/A
Validation			
MolProbity score	3.18	2.82	N/A
Clashscore	21.06	24.45	N/A
Poor rotamers (%)	0.1	0.1	
Ramachandran plot			
Favored (%)	90.13	89.53	N/A
Allowed (%)	9.37	9.97	N/A
Disallowed (%)	0.5	0.5	N/A

**Table S2. Interactions of nsp14 with other components in N7-CCC (Related to Figure 2).**

Molecule	Residue	Molecule	Residue
nsp14	K13	nsp12	Q224
	R98		Q81, E84
	H95, T103	nsp9	R111
	D10	nsp10	N3
	T5		E6
	K196		A18
	K200		F19, A20
	I201, F60		F19
	Y69		D29
	T25, H26, L27		N40
	C39		K43, L45
	T131		H80
	Q130		G88
	K47		G94
	D10		N3
	Y51, T127		K93
	D41		Y96
	T21		G94
A23	S72		

**Table S3. Inter-protomer interaction in dCap(0)-RTC (Related to Figure 3).**

Molecules in Protomer A	Residue	Molecules in Protomer B	Residue
nsp14	V460, Y465, L479, V483, L486	nsp13	I79, F81, F90
	D464		N86
	Y517	nsp8-2	Y12
	D172	nsp12	E431
	L406		K426, Q886
	I502		R889
	K433		E917
Q441	E919		
nsp12	I106	nsp12	N158