

References

- 1) W Yin, *et al.* *Science* **368**, 1499-1504 (2020); 2) CJ Gordon, EP Tchesnokov, JY Feng, DP Porter, M Götte. *J Biol Chem* **295**, 4773–4779 (2020); 3) CJ Gordon, *et al.* *J Biol Chem* **295**, 6785–6797 (2020); 4) EP Tchesnokov, *et al.* *J Biol Chem* **295**, 16156–16165 (2020); 5) TL Dangerfield, NZ Huang, KA Johnson. *science* **23**, 101849 (2020); 6) TC Appleby, *et al.* *Science* **347**, 771–775 (2015); 7) EP Tchesnokov, JY Feng, DP Porter, M Götte. *Viruses* **11**, 326 (2019); 8) JPK Bravo, TL Dangerfield, DW Taylor, KA Johnson. *Mol Cell* (2021) <https://doi.org/10.1016/j.molcel.2021.01.035>; 9) G Kokic, *et al.* *Nat Commun* **12**, 279 (2021); 10) M Seifert, *et al.* *Biorxiv*, 2020.08.06.240325 (2020); 11) KC Lehmann, *et al.* *Nucleic Acids Res* **43**, 8416–8434 (2015); 12) H Slanina, *et al.* *Proc Natl Acad Sci* **118**, e2022310118 (2021); 13) L Yan, *et al.* *Cell* **184**, 184-193.e10 (2021); 14) AP Walker, H Fan, JR Keown, JM Grimes, E Fodor. *Biorxiv*, 2021.03.17.435913 (2021); 15) J Chen, *et al.* *Cell* **182**, 1560-1573.e13 (2020).; 16. B Malone, *et al.* *Proc Natl Acad Sci* **118**, e2102516118 (2021).

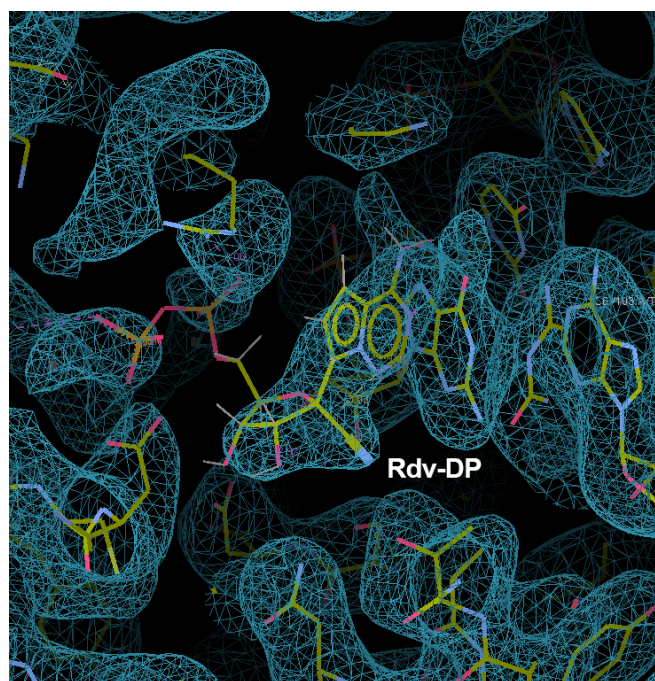


Fig. 1. Cryo-EM density (blue mesh) of structure 1 (Table 1; 3.1 Å nominal resolution). A preliminary structural model is superimposed. Rdv-DP is bound in a pre-insertion conformation.

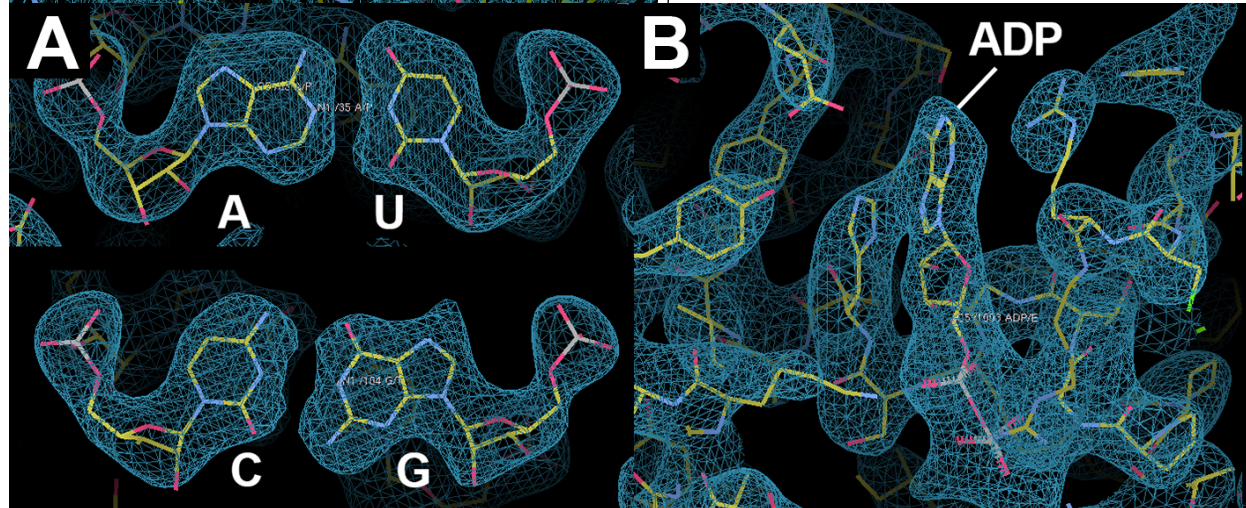


Fig. 2. Cryo-EM map and models for high-resolution nsp13₂-RTC (2.8 Å nominal resolution). **A.** RNA base pair identity clearly seen. **B.** Nucleotide binding site of nsp13 (ADP modeled, AIF₃ and Mg²⁺ not yet modeled).

Table 1: Proposed Rdv structures

Priority	structure	RNA sequence	ligand
	1	5'cgcguaagcaugcuacGUCAUUCUCCUAAGAAGCUG ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGAUUCUUCGACUCGGCGAGUGUACCCCUAUC	Rdv-DP
	2	5'cgcguaagcaugcuacGUCAUUCUCCUAAGAAGCU ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGAUUCUUCGACUCGGCGAGUGUACCCCUAUC	Rdv-TP
	3	5'cgcguaagcaugcuacGUCAUUCUCCUAAGAAGCU ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGAUUCUUCGACUCGGCGAGUGUACCCCUAUC	ATP
4	4	5'cgcguaagcaugcuacGUCAUUCUCCUAAGAAGCUG ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGAUUCUUCGACUCGGCGAGUGUACCCCUAUC	–
5	5	5'cgcguaagcaugcuacGUCAUUCUCCUAAGAAGCUGA ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGAUUCUUCGACUCGGCGAGUGUACCCCUAUC	–
2	6	5'cgcguaagcaugcuacGUCAUUCUCCacgcgaagcA ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGugcgcuucgu ^{3'} cuguuguuuUACCCCUAUC	–
3	7	5'cgcguaagcaugcuacGUCAUUCUCCacgcgaagcA ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGugcgcuucguAcuguuguuuUACCCCUAUC	–
	8	5'cgcguaagcaugcuacGUCAUUCUCCacgcgaagcaU ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGugcgcuucgu ^{3'} cuguuguuuUACCCCUAUC	–
1	10	5'cgcguaagcaugcuacGUCAUUCUCCacgcgaagcaU ^{3'} 3'gcgcaucguacgaugCAGUAAGAGGugcgcuucguAcuguuguuuUACCCCUAUC	–

Color key

Cryo-EM data already collected (structure not refined)