Supporting Information

ATP enhances the error-prone ribonucleotide incorporation by the SARS-CoV-2 RNA polymerase

Yasin Pourfarjam[1,2], Zhijun Ma[1], and In-Kwon Kim[1,*]

From the [1] Department of Chemistry, University of Cincinnati, 301 Clifton Ct, Cincinnati, OH 45221, USA.

Running title: *ATP-dependent error-prone RNA replication by SARS-CoV-2*

[2]Present address: Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer, New York, NY 10065, USA.

* To whom correspondence should be addressed: In-Kwon Kim, Department of Chemistry, University of Cincinnati, 301 Clifton Ct, Cincinnati, OH 45221, USA; E-mail: kimiw@ucmail.uc.edu; Tel.: (513) 556-1909; Fax.: (513) 556-9239.

Supporting information contents:

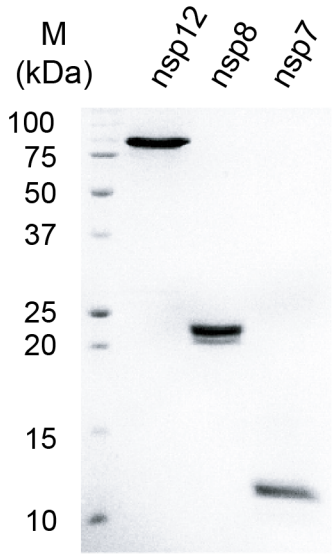

Figure S1. Purified SARS-CoV-2 nsp12, nsp7, and nsp8 proteins used in this study.

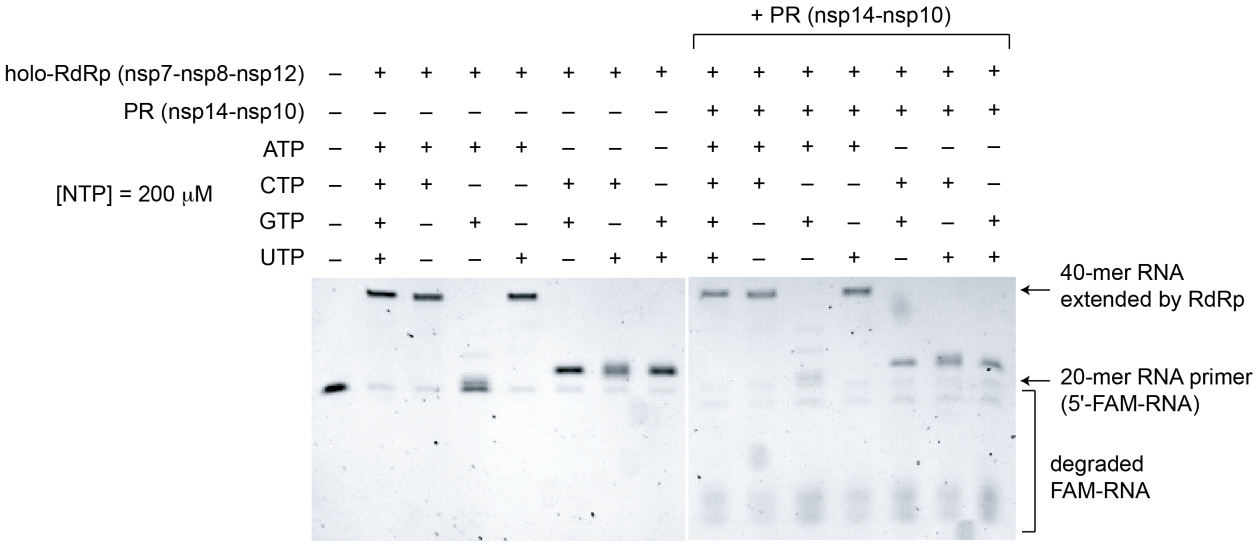

Figure S2. ATP-dependent low-fidelity nucleotide incorporation at [NTP] = 200 μM, in the presence and absence of RNA proofreading nuclease. PR indicates proofreading nuclease (nsp14-nsp10).

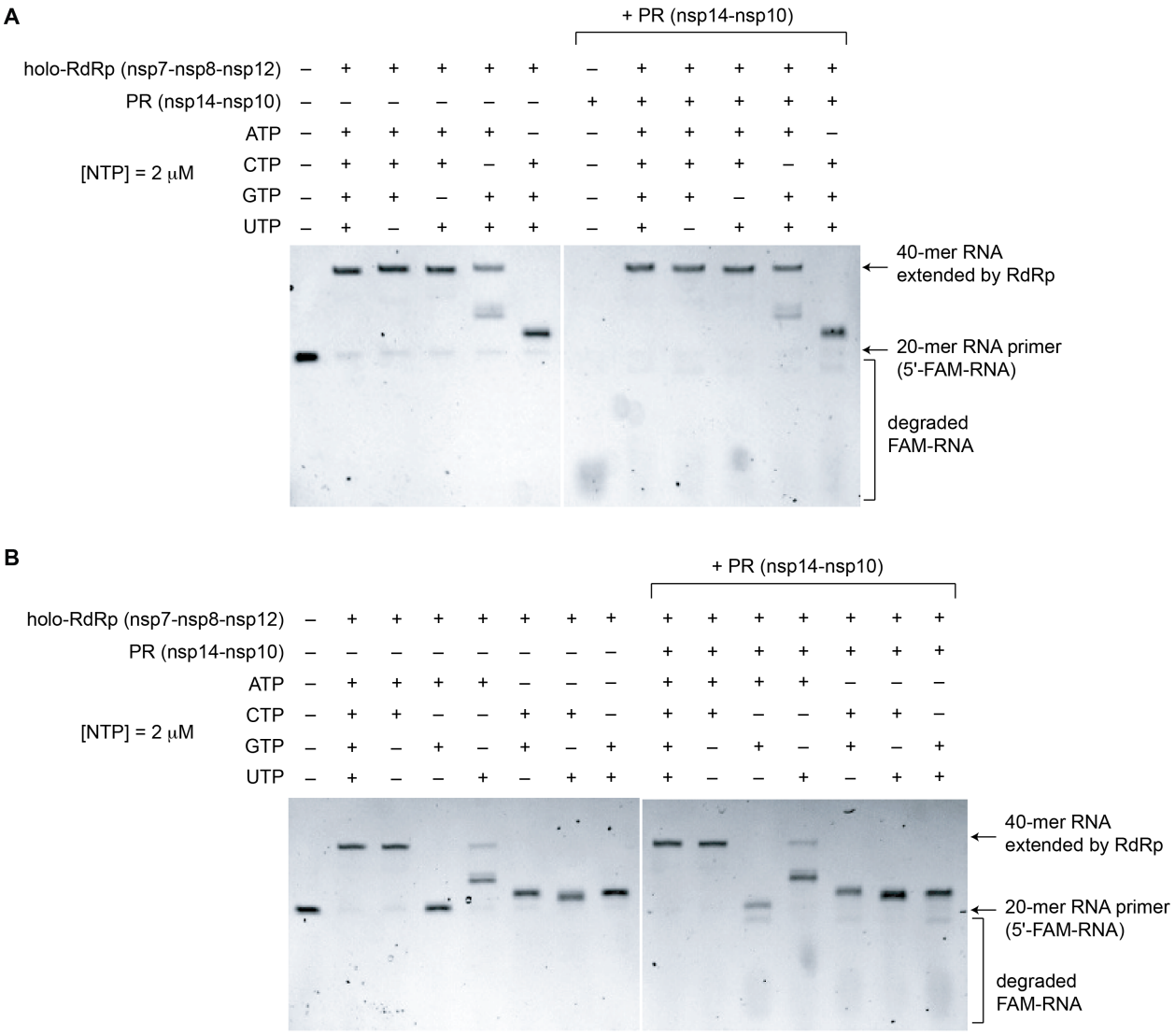

Figure S3. ATP-dependent low-fidelity nucleotide incorporation at [NTP] = 2 μM, in the presence and absence of RNA proofreading nuclease. PR indicates proofreading nuclease (nsp14-nsp10).

Table S1. RNA and DNA oligonucleotides used in this study.

Oligo name	Sequence 5′ → 3′
5′-FAM-20mer-RNA primer	5′-FAM-GUCAUUCUCCUAAGAAGCUA-3′
40mer-RNA template	5′-CUAUCCCCAUGUGAUUUUAAUAGCUUCUUAGGAGAAUGAC-3′
5′-FAM-20mer-DNA primer	5’-FAM-GTCATTCTCCTAAGAAGCTA-3′
40mer-DNA template	5′-CTATCCCCATGTGATTTTAATAGCTTCTTAGGAGAATGAC-3′