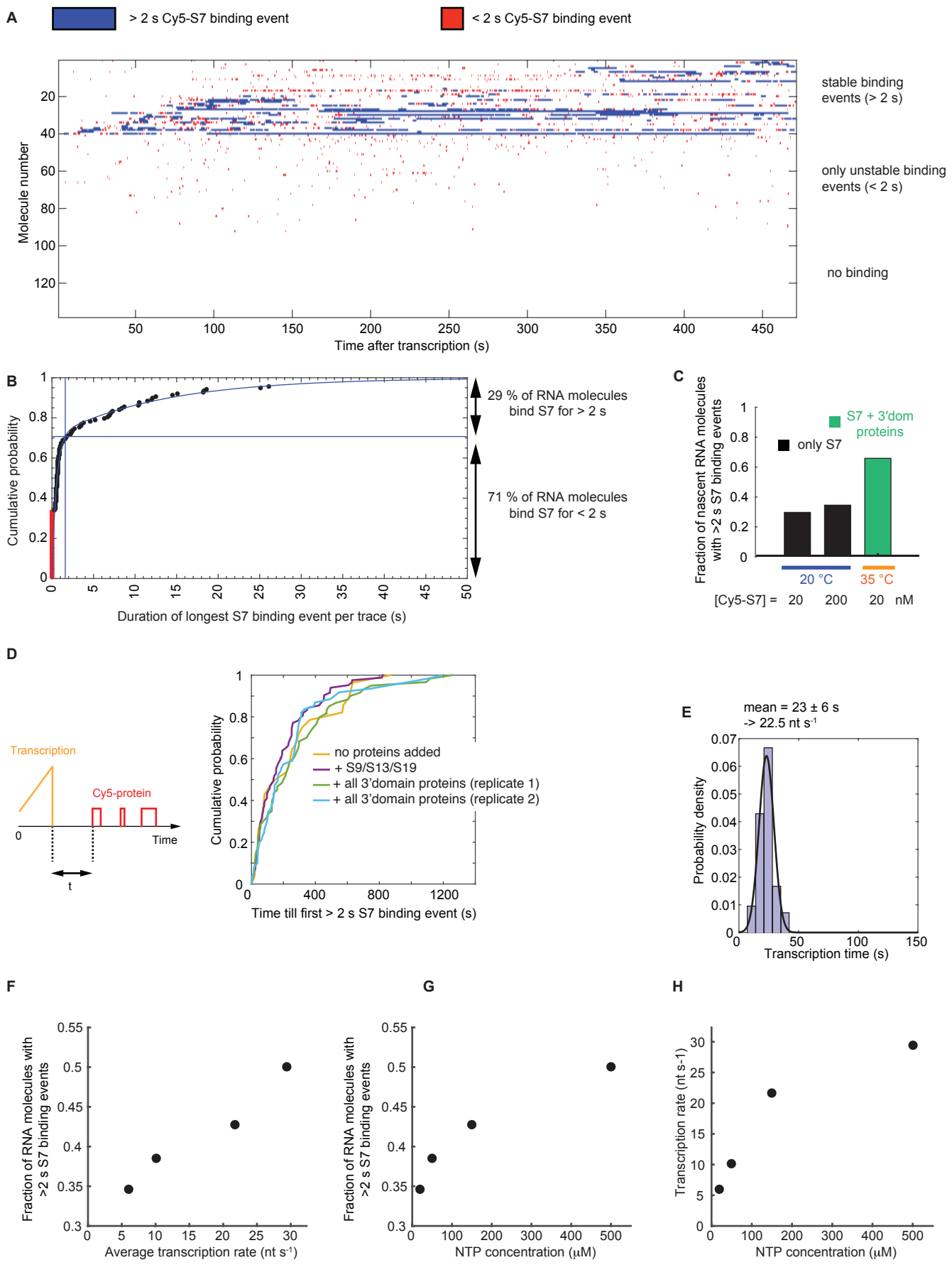
A
> 2 s Cy5-S7 binding event
< 2 s Cy5-S7 binding event
Molecule number
Time after transcription (s)
stable binding events (> 2 s)
only unstable binding events (< 2 s)
no binding
B
Cumulative probability
Duration of longest S7 binding event per trace (s)
29 % of RNA molecules bind S7 for > 2 s
71 % of RNA molecules bind S7 for < 2 s
C
Fraction of nascent RNA molecules with >2 s S7 binding events
only S7
S7 + 3'dom proteins
20 °C
35 °C
[Cy5-S7] = 20 200 20 nM
D
Transcription
Cy5-protein
Time
t
Cumulative probability
Time till first > 2 s S7 binding event (s)
no proteins added
+ S9/S13/S19
+ all 3'domain proteins (replicate 1)
+ all 3'domain proteins (replicate 2)
E
mean = 23 ± 6 s
-> 22.5 nt s-1
Probability density
Transcription time (s)
F
Fraction of RNA molecules with >2 s S7 binding events
Average transcription rate (nt s-1)
G
Fraction of RNA molecules with >2 s S7 binding events
NTP concentration (μM)
H
Transcription rate (nt s-1)
NTP concentration (μM)

Fig. S2