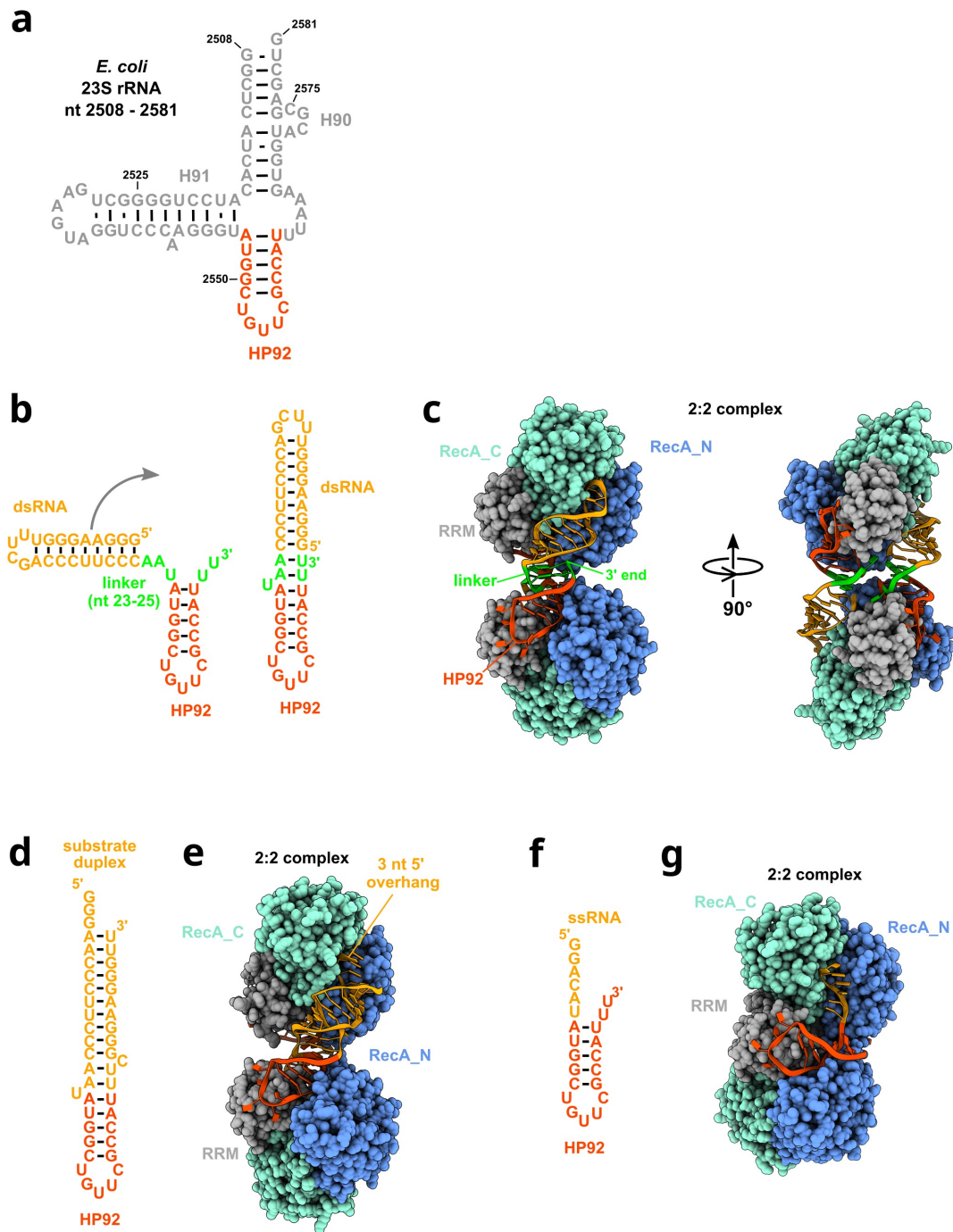




Supplementary Fig. 7: Crystallized RNA constructs and 2:2 complexes

(a) *E. coli* 23S rRNA region (nt 25-0825-82) that contains HP92 (orange) and the adjacent helices H90 and H91 (grey). (b) RNA construct used for crystallization of the hp-HP92/DbpA/ADP/BeF₃ complex. The expected secondary structure of the hp-HP92 RNA is shown on the left and the secondary structure observed in the crystal is shown on the right. The linker (nt 23-25 green) between the substrate hairpin (orange) and HP92 (red) forms two base pairs with the uridines at the 3' end, which leads to co coaxial stacking of the two helices. (c) Crystallized 2:2 complex between 2 DbpA molecules and 2 hp-HP92 RNAs (chains A/B/FG). Each RNA interacts with two DpbA

molecules: HP92 binds to the RRM of one DbpA molecule and the substrate hairpin interacts with the RecA domains of the other DbpA molecule. **(d)** ds-HP92 RNA construct used for crystallization of the ds-HP92/DbpA/ADP/BeF₃ complex. To facilitate crystallization the construct was designed to mimic the conformation of the hp-HP92 RNA observed in the crystal (compare to (a)). Instead of the hairpin the ds-HP92 RNA possess a ss/dsRNA junction with 5' ssRNA overhang of 3 nt that interacts with the RecA domains of the helicase core. **(e)** Crystallized 2:2 complex between 2 DbpA molecules and two ds-HP92 RNAs (chains A/B/C/D). **(f)** ss-HP92 RNA construct used for crystallization of the ss-HP92/DbpA/ADP/BeF₃ complex. **(g)** Crystallized 2:2 complex between two DbpA molecules and two ss-HP92 RNAs (chains A/B/C/D)