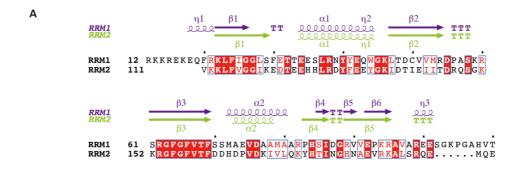
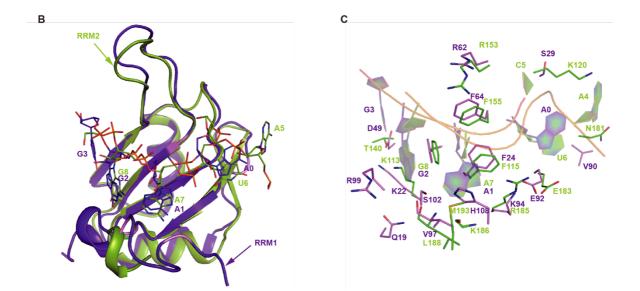
SUPPLEMENTAL INFORMATION

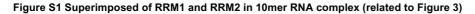
Molecular basis for the specific and multivariate recognitions of RNA substrates by human hnRNPA2/B1

Baixing Wu^{1,4}, Shichen Su^{1,4}, Deepak P. Patil², Hehua Liu^{1, 3}, Jianhua Gan³, Samie R. Jaffrey² & Jinbiao Ma^{1,5*}

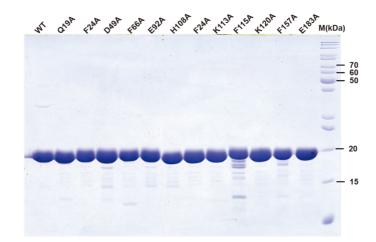
SUPPLEMENTAL FIGURE LEGENDS







- (A) Sequence alignment between RRM1 and RRM2, the secondary structures are colored in purple-blue and green, respectively.
- (B) Superposition of RRM1(12-110)-AAGG and RRM2(111-195)-ACUAGC.
- (C) Superposition of residues participated in RNA recognition in RRM1 and RRM2. The RNA chains are shown by cartoon.



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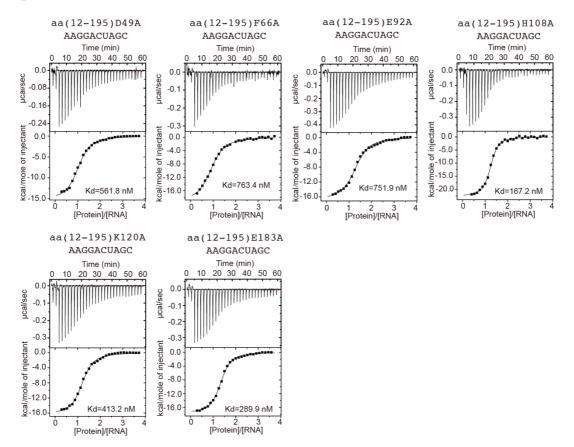


Figure S2 Mutagenesis study of RRMs by ITC experiments (related to Figure 3)

(A) SDS-PAGE of wildtype and protein mutants.

(B) ITC results of hnRNPA2/B1 mutants with 10mer RNA.

Α

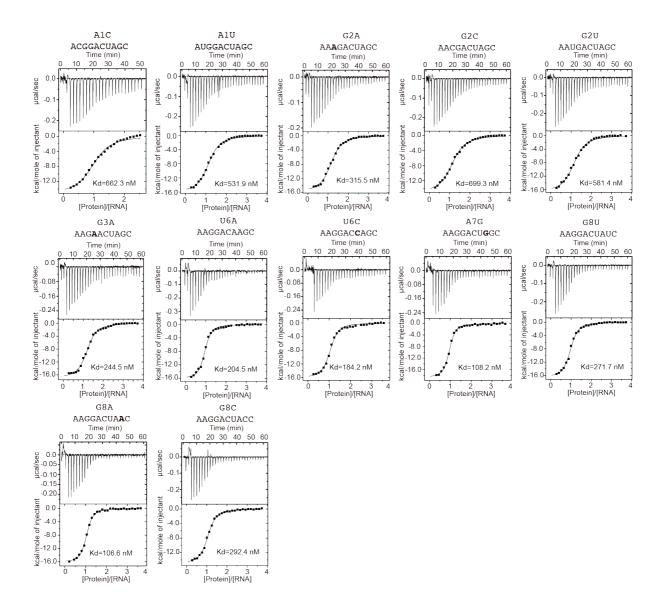
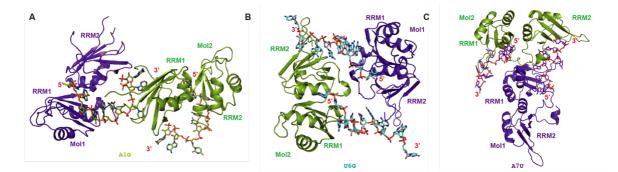


Figure S3 Mutagenesis study of RNA by ITC experiments (related to Figure 3).



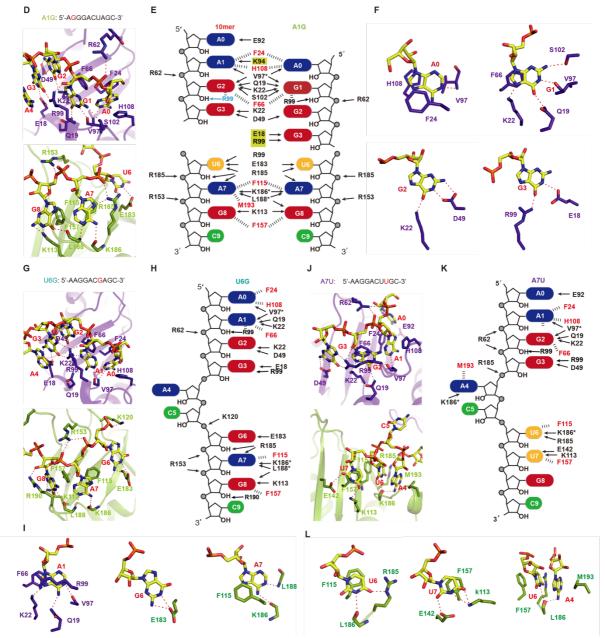


Figure S4 Schematic representations of RRMs interactions with RNA mutants (related to Figure 4).

(A) Close-up view showing the specific RNA recognition in U6G complex.

- (B) Comparison of detailed interactions between 10mer complex and U6G complex.
- (C) Close-up view showing the specific RNA recognition in A7U complex.
- (D) Comparison of detailed interactions between 10mer complex and A7U complex.

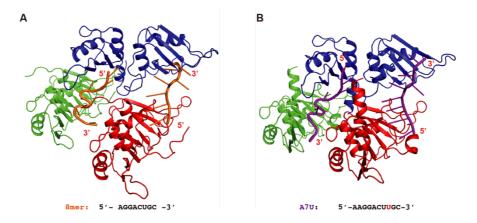
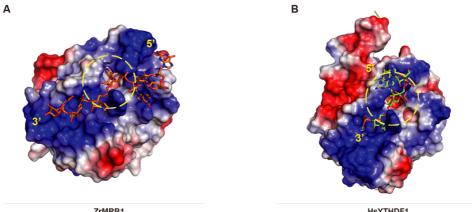


Figure S5 Crystal packing interactions (related to Figure 5).

- (A) Crystal packing interactions in 8mer.
- (B) Crystal packing interactions in A7U complex.



ZrMRB1 5'-AGGm6ACAU-3'

HsYTHDF1 5'-GGm6ACU-3'

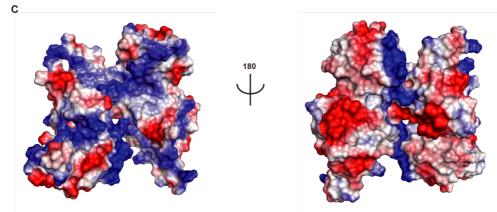


Figure S6 Surface charge comparison of ZrMRB1, HsYTHDF1 and hnRNPA2/B1 (related to Figure 6).

(A) Surface representation of *Zr*MRB1 in complex with RNA containing m⁶A modification.

- (B) HsYTHDF1 in complex with RNA containing m^6A modification, RNA are all shown by stick.
- (C) Surface representation of hnRNPA2/B1 RRMs in complex with 10mer RNA.

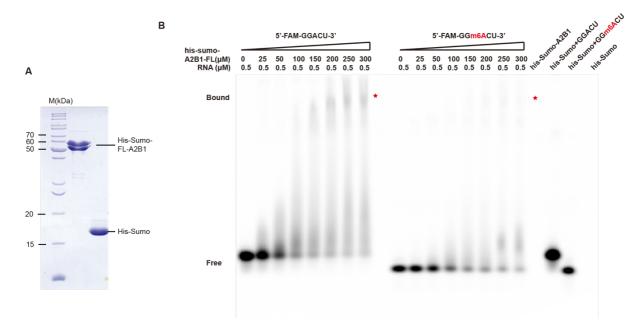


Figure S7 EMSA experiment (related to Figure 6).

(A) SDS-PAGE of full-length hnRNPA2/B1 with His-sumo tag.

(B) EMSA result of full-length hnRNPA2/B1 and 5'-FAM-labeled RNA substrates with or without m⁶A modification.