

# Appendix Table S1

## Plasmid constructs

### Constructs for phase separation assay

Name	Vector	Forward primer (5'-3')	Reverse primer (5'-3')	Restriction sites
His-RFP	pET28a	GGACAGCAAATGGGTCGCG GATCCatggcctcctccgaggacgt	GTGGTGGTCTCGAGTGCGGC CGCAggcggctggagtgccggc	BamHI/NotI
His-zParn-RFP	His-RFP	CAGCAAATGGGTCGCGGATC Catggaggtcacgagacagaattta	TCCTCGGAGGAGGCCATGGAc caaacctgaggacgtcaaagagc	BamHI

### Constructs for co-IP

Name	Vector	Forward primer (5'-3')	Reverse primer (5'-3')	Restriction sites
pCS2-RFP	pCS2	CTTGTTCTTTTTGCAGGATCC atggcctcctccgaggacgt	CTATAGTCTTAGAGGCTCGAGt caggagagcacacacttgca	BamHI/XhoI
Luciferase-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catggaagacgccaataacataa	TCCTCGGAGGAGGCCATGGAc acggcgatcttccgcccttc	BamHI
zCnot1-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catgaatctgactcgctcgcctgg	TCCTCGGAGGAGGCCATGGAA ctggcaccggttccctccatcacc	BamHI
zCnot1-N-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catgaatctgactcgctcgcctgg	TCCTCGGAGGAGGCCATGGAtg taggtctgtgatggttggtt	BamHI
zCnot1-M-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Cgctgtggaccaagaagatgtgc	TCCTCGGAGGAGGCCATGGAct ccgatgctgagaaatccagag	BamHI
zCnot1-C-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Ctactgatgccaccaggccttagag	TCCTCGGAGGAGGCCATGGAA ctggcaccggttccctccatcacc	BamHI
zCnot6a-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catgccaaggaaaaatgatccgc	TCCTCGGAGGAGGCCATGGAc ctgcggccaggcagatggatgccg	BamHI
zPan2-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catgatgaactcgagggctggacc	TCCTCGGAGGAGGCCATGGAta aaccatcactgagggaaatagc	BamHI
zPan3-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catgaacagtggtgactccccgctcag	TCCTCGGAGGAGGCCATGGAc agggggcggttcgccgtggccagc	BamHI
zParn-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catggaggtcacgagacagaattta	TCCTCGGAGGAGGCCATGGAc caaacctgaggacgtcaaagagc	BamHI
zDcp1a-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catggagtggtgataaaagcgggtc	TCCTCGGAGGAGGCCATGGAta acttgacattgttgaggcctta	BamHI
zDcp2-RFP	pCS2-RFP	ACTTGTCTTTTTGCAGGATC Catggagacaaaaagaggggagattc	TCCTCGGAGGAGGCCATGGAg gactcgaagcaggatttcagatg	BamHI

### Constructs for zebrafish microinjection

Name	Vector	Forward primer (5'-3')	Reverse primer (5'-3')	Restriction sites	Linearization site/ RNA polymerase
14b-200nt-GFP	pCS2	N200-F: GGATCCCATCGATTCAATTC cggaagtggaccgaccttttg	N200-R: TCCTCGCCCTTGCTCACCAtag cgccctcccctgcaggt	EcoRI/XhoI	NotI/SP6
		GFP-F: ATGGTGAGCAAGGGCGAGGA GC	GFP-R: CTATAGTCTTAGAGGCTCGAGT TACTTGTACAGCTCGTCCA		

## Constructs for *in situ* probes

Name	Vector	Forward primer (5'-3')	Reverse primer (5'-3')	Restriction sites	Linearization site/ RNA polymerase
<i>org</i>	pcDNA3	GCTTGGTACCGAGCTCGctgg gcctcagaggaacta	GTGATGGATATCTGCAGatgactg accagtgaacta	BamHI/EcoRI	XhoI/T7
<i>trip10a</i>	pcDNA3	GCTTGGTACCGAGCTCGgttaa gtgtgattgtggcgt	GTGATGGATATCTGCAGggcttca ctcatcttctcc	BamHI/EcoRI	XhoI/T7
<i>dnajc5ga</i>	pcDNA3	GCTTGGTACCGAGCTCGtttctg gggtgtgtacacgg	GTGATGGATATCTGCAGatcatgg cagacgccaagcc	BamHI/EcoRI	XhoI/T7
<i>ccnb1</i>	pcDNA3	CTTGGTACCGAGCTCGGATC Ctgagatctgcttagccaggt	TGATGGATATCTGCAGAATTCat gatggctctccgtgtcac	BamHI/EcoRI	XhoI/T7

## Antibodies and drugs

### Primary antibodies

Name	Antigen	Host organism	Source	Dilution	IB/IF
mRbm14	Human RBM14	Rabbit, poly	Sigma, R04295	1:3,000(IB)/1:100(IF)	IB/IF
zRbm14a	Zebrafish rbm14a	Rabbit, poly	Raised in lab	1:1,000(IB)/1:100(IF)	IB/IF
$\alpha$ -Tubulin	Chick microtubules	Mouse, mono	Sigma, T9026	1:5,000	IB
$\gamma$ -Tubulin	Gamma-Tubulin	Mouse, mono	Life Technologies, MA119421	1:100	IF
GFP	GFP	Rabbit, poly	Life Technologies, A-6455	1:5,000	IB
RFP	RFP	Rat, mono	Chromotek, 5F8	1:3,000	IB
m <sup>6</sup> A	N6-methyladenosine	Rabbit, mono	Cell Signaling, #56593	1:500(IB)/1:200(IF)	IB/IF
PARN	Human PARN (1-347 aa)	Rabbit, poly	Proteintech, 13799-1-AP	1:2,000	IB
zParn	Zebrafish Parn	Rabbit, poly	Raised in lab	1:200	IF/IB
DIG-POD	Digoxigenin	Sheep, poly	Roche, 11207733910	1:1,000	IF
Gata6	Human GATA6	Goat, poly	R&D, AF1700	1:100	IF
Nanog	Mouse Nanog	Mouse, mono	SANTA CRUZ, sc-376915	1:100	IF
Oct4	Mouse Oct3/4	Mouse, mono	BD, 611202	1:100	IF

### Secondary antibodies

Name	Host organism	Source	Dilution	IB/IF
Anti-mouse IgG (H+L)- HRP	Goat	Life Technologies, G- 21040	1:5,000	IB
Anti-rabbit IgG (H+L)- HRP	Goat	Life Technologies, G- 21234	1:5,000	IB
Anti-rat IgG (H+L)-HRP	Goat	Abclonal, AS028	1:3,000	IB
Anti-mouse IgG (H+L)- Cy3	Donkey	Jackson ImmunoResearch, 715- 165-151	1:1,000	IF
Anti-mouse IgG (H+L)- Alexa Fluor 647	Donkey	Life Technologies, A- 31571	1:1,000	IF
Anti-rabbit IgG (H+L)- Alexa Fluor 488	Donkey	Life Technologies, A- 21206	1:1,000	IF
Anti-goat IgG (H+L)- Alexa Fluor 546	Donkey	Life Technologies, A- 11056	1:1,000	IF

## Drugs

Name	Source	Working Concentration
5-Ethynyl Uridine (EU)	Click Chemistry Tools, #1261	40 pmol per embryo
1,6-Hexanediol	Sangon Biotech Co., Ltd., A601513	0%-1.25% (w/v)
Hoechst 33342	Life Technologies, H3570	2 µg/mL
Pyronin Y	MedChem Express, HY-D0971	4 µg/mL
RNase A	Life Technologies, 12091021	100 µg/ml
Proteinase K	Sigma, P6556	5 µg/ml

## Oligos

### Morpholino oligos

Name	Targeted gene	Sequence(5'-3')
ctrl-MO	- (negative control)	CCTCTTACCTCAGTTACAATTATA
14a-MO	Zebrafish <i>rbm14a</i>	GCTTCACTGCGCTGCTGTCGTCAT
14b-MO	Zebrafish <i>rbm14b</i>	TTTTATTCCAGTTGACTCACCTGGC
14b-tMO	Zebrafish <i>rbm14b</i>	GTTTCAAATGGTGGTCCACTTCC

### RNA oligos

Oligo name	Gene	Sequence (5'-3')	Length (nt)	Inter-modification
0m <sup>5</sup> C	<i>cap1</i>	aUggUgagcaagggcUCCUGUCGUGUGAAAUCGUCAGCGCCA AGAGCUCCGAGAUGAA	59	-
1m <sup>5</sup> C	<i>cap1</i>	aUggUgagcaagggcUCCUGUCGUGUGAAAUCGUCAGCGCCA AGAGCUm <sup>5</sup> CCGAGAUGAA	59	m <sup>5</sup> C
0m <sup>6</sup> A	-	GGACUCGGACUUGGACUCUGGACUUUGGACUUGGACUUGG ACUUCGGACUCGGACUUUGGACU	63	-
1m <sup>6</sup> A	-	GGUCUCGGUCUUGGUCUCUGGUCUUUGGm <sup>6</sup> ACUUGGUCU UGGUCUUCGGUCUCGGUCUUUGGUCU	63	m <sup>6</sup> A
10m <sup>6</sup> A	-	GGm <sup>6</sup> ACUCGGm <sup>6</sup> ACUUGGm <sup>6</sup> ACUCUGGm <sup>6</sup> ACUUUGm <sup>6</sup> ACUUGGm <sup>6</sup> ACUUGGm <sup>6</sup> ACUUCGGm <sup>6</sup> ACUCGGm <sup>6</sup> ACUUUG Gm <sup>6</sup> ACU	63	m <sup>6</sup> A

### Primers for mouse genotyping

Name	Sequence(5'-3')
F1	GTGGGCTCTATGGCTTCTGA
F2	GCCATTGGGATTTAGGTGGG
R1	TCTGCTGAAGCTCCCTTCCA

### Primers for poly(A) tail length assay

Gene	Forward primer (5'-3')	Reverse primer (5'-3')
<i>org</i>	TGAGAGTGATTTGGAAGTCG	AGACAAACATTCTGAAACCG
<i>trip10a</i>	CGTTTGCTATTTCGATAGGT	AACTTACCCAGACATTCAACAG
<i>dnajc5ga</i>	ATCTGCTTCCAAACCAACTC	GTAGCGATGTAGTGTGTCATGG
<i>actb1</i>	TTGTTATAGTGTATGTAATTATG	GCTTCCCTCATTGCAACA