

Supplementary Information 1 | Association RNA-binding protein with viral infection. The 17 proteins annotated as members of the Reactome "RALY/hnRNP-C" module in Figure 2g were analyzed for published association with viral infection. Table includes manual interpretation of function and association with virus or infection, with PMID indicated.

Gene	Uniprot ID	Protein Name	Synonyms/Alternate names	Function	Association with virus or infection (PMID in parentheses)
RPN2	P04844	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 2	RPN-II, RIBIIR, Ribophorin-2	N-glycosylation	none
RPSA	P08865	40S ribosomal protein SA	LAMBR, LAMR1	assembly and stability of 40S ribosomal subunit	acts as a receptor for AAV (16973587), Dengue (15507651), Sindbis (1385835), Venezuelan equine encephalitis virus (1385835), swine fever virus (25694590), interacts with Foot-and-mouth disease virus protein VP1 (31694957), interacts with Hepatitis C virus cis-acting replication element (30382192)
PABPN1	Q86U42	Polyadenylate-binding protein 2	PABP-2, Poly(A)-binding protein 2, PABII, PAB2, PABP2	poly(A) tail assembly and other stages of mRNA metabolism	involved in viral RNA decay of KHSV (30785952), binding or localization may be impacted by canine parvovirus (23035221), Arabidopsis thaliana protein interacts with Turnip mosaic virus (17670821), Influenza A NS1 proteins binds and relocalizes (10205180)
HNRNPU	Q00839	Heterogeneous nuclear ribonucleoprotein U	SAFA, HNRPU	DNA and RNA binding, involved in chromatin organization, transcription, RNA splicing, RNA stability, Xist-mediated transcriptional silencing	potential viral RNA sensor of HSV (31513772), negative regulator of HIV transcript expression (16916646)
ABCD3	P28288	ATP-binding cassette sub-family D member 3	PMP70, PXMP1	long chain fatty acid transporter, ATPase activity	involved in latent KSHV infection (28257516)
EIF4A3	P38919	Eukaryotic initiation factor 4A-III	DDX48, KIAA0111, eIF4A-III	RNA helicase, component of spliceosome	mediates viral RNA processing in Avian Influenza A virus (31379779)
RALY	Q9UKM9	RNA-binding protein Raly	HNRNPCL2, P542	RNA binding protein, in hnRNP family	none
SND1	Q7KZF4	Staphylococcal nuclease domain-containing protein 1	TDRD11	endonuclease, RNA decay	m6A reader required for normal KSHV gene expression and lytic replication (31647415), binds Dengue virus 3' UTR and required for normal DENV replication and RNA levels (21148275), interacts with NSP1 of Equine arteritis virus (12917451), binds to Epstein-Barr EBNA2 and coactivates gene expression (7651391)
RPL7A	P62424	60S ribosomal protein L7a	SURF3, Large ribosomal subunit protein eL8	ribosomal protein	L. striatellus RPL7a binds to Rice stripe virus particles (22028913)
RPS8	P62241	40S ribosomal protein S8	Small ribosomal subunit protein eS8	ribosomal protein	interacts with Dengue virus 3' UTR and implicated in DENV replication (26389898)
HBS1L	Q9Y450	HBS1-like protein	ERFS, HBS1, KIAA1038	elongation factor, RNA quality control	assists in degradation of Hepatitis B virus X-mRNA (27281821)
ABCD1	P33897	ATP-binding cassette sub-family D member 1	ALD, ALDP	ATP binding, nucleotide binding, transport	none
HNRNPC	P07910	Heterogeneous nuclear ribonucleoproteins C1/C2	HNRNPC	interacts with poly-U tracts of mRNA, modulates RNA stability and splicing	binds EBV IR1 sisRNA (29458410), binds the Influenza B virus NS1 protein (28869005), upregulated during Japanese encephalitis virus infection and binds JEV RNA (28102850), involved in Dengue virus RNA synthesis and impacts replication (25890165), interacts with Hepatitis delta virus small antigen (21774814), binds the Human Papillomavirus type-1 AU-rich inhibitory element (11172920), interacts with Epstein-Barr early proteins SM and M (9765385)
TPM4	P67936	Tropomyosin alpha-4 chain	TM30p1, Tropomyosin-4	actin binding protein	none
RPL15	P61313	60S ribosomal protein L15	EC45, Large ribosomal subunit protein eL15	ribosomal protein	binds Classical swine fever virus NS4B protein (30541955)
RPS15A	P62244	40S ribosomal protein S15a	Small ribosomal subunit protein uS8	ribosomal protein	none
TPM2	P07951	Tropomyosin beta chain	TMSB, Tropomyosin-2, Beta-tropomyosin	actin binding protein	none

Supplementary Information 2 | Primer sequences. Primer sequences for qPCR, FISH, and eCLIP-Seq.

qPCR Primers used in this study

	Gene	Forward Primer (5' to 3')	Reverse Primer (5' to 3')
RNA Primers	Major Late Promoter Spliced	TTCCGCATCGCTGTCTG	CCGATCCAAGAGTACTGGAAAG
	Major Late Promoter Unspliced	GTCCAGGGTTTCCTTGATGAT	
	Fiber Spliced	GAAAGGCGTCTAACCAGTCA	AAAGGCACAGTTGGAGGAC
	Fiber Unspliced	CATCCGCACCCACTATCTTC	
	E1A Spliced	TGGACCCTCGGGAATGAA	TCAGGCTCAGTTTCAGACA
	E1A Unspliced	GGCTTAAGGGTGGGAAAGAA	
	Penton		GGAGCATCGAAGGGAGAAC
	Hexon	GAAAGGCGTCTAACCAGTCA	CCCGAGATGTGCATGTAAGA
	L4-100K		GGTTAGGCTGTCCTTCTTCTC
	DBP	ATCACCACCGTCAGTGAA	GTGTTATTGCTGGGCGA
	E4-common	GACAGGAAACCGTGTGGAATA	CACAGAGTACACAGTCCTTTCTC
	GAPDH	TGCACCACCAACTGCTTAGC	GGCATGGACTGTGGTCATGAG
	hnRNP-C	TCGAAACGTCAGCGTGTATC	CTGGGTCAGCTCCTTCTTAATG
	RALY	CTTCAGGCAAGCAATGTAACC	CCATGTTGATGTCCAGGGTC
	HPRT	TGACACTGGCAAAACAATGCA	GGTCCTTTTCACCAGCAAGCT
	Actin	GCACCACACCTTCTACAATGAG	GGTCTCAAACATGATCTGGGTC
Genomic Primers	DBP	ATCACCACCGTCAGTGAA	GTGTTATTGCTGGGCGA
	Tubulin	CCAGATGCCAAGTGACAAGAC	GAGTGAGTGACAAGAGAAGCC

FISH probes

Fiber probes:

Probe name	5' -> 3'
Ad5 Fiber 1	gaaggtatcttcagacggtc
Ad5 Fiber 2	tgatcatatggatacacgggg
Ad5 Fiber 3	gaaaaggcacagtggagga
Ad5 Fiber 4	atgtttgcagggtagcttt
Ad5 Fiber 5	tactgctatcggtggtggtg
Ad5 Fiber 6	gggtgaggcagtgatagtaa
Ad5 Fiber 7	taccagtggcagtagttaga
Ad5 Fiber 8	tctttcaagtcaatgcccaa
Ad5 Fiber 9	ttaatagtcacacctggacc
Ad5 Fiber 10	ctccagtaactttagtttg
Ad5 Fiber 11	tgcttgtgaatcaaaaccc
Ad5 Fiber 12	cctgctacattaagttgcat
Ad5 Fiber 13	aggcgtctgtttgagaatc
Ad5 Fiber 14	ggttttgagcatcaaacgga
Ad5 Fiber 15	gtaaaggcctttgtttagt
Ad5 Fiber 16	tggaattgttgaagctgta
Ad5 Fiber 17	cttaggttaacctcaagctt
Ad5 Fiber 18	aaacatcaacccttggcag
Ad5 Fiber 19	ttaatggctatggctgtagc
Ad5 Fiber 20	aaattcaagcccatctcctg
Ad5 Fiber 21	tgtttgggtgcattaggtgaa
Ad5 Fiber 22	accatagccttgtttgaatc
Ad5 Fiber 23	aaggccagttcctagtttag
Ad5 Fiber 24	tggcacctgtgctgtcaaaa
Ad5 Fiber 25	gggtgtggtccacaaagttag
Ad5 Fiber 26	gtctacagttaggagatgga
Ad5 Fiber 27	ttagcatctttctctgcatt
Ad5 Fiber 28	gcactccattttctgcaaat
Ad5 Fiber 29	ggccaggaaggaattgttt
Ad5 Fiber 30	tctccatttctaaagttcca
Ad5 Fiber 31	ataggctgtgccttcagtaa
Ad5 Fiber 32	aggcataaatccaacagcgt

GAPDH Probes:

Probe name	5' -> 3'
hGAPDH_1	caaaagaagatgctggctgac
hGAPDH_2	catggtgtctgagcgtatgtg
hGAPDH_3	atacgaccaaatccgttgac
hGAPDH_4	cagagttaaagcagccctg
hGAPDH_5	tgatggcaacaatatccact
hGAPDH_6	ttgaggtcaatgaaggggtc
hGAPDH_7	ttggaacatgtaaccatgt
hGAPDH_8	gaatttgccatgggtggaat
hGAPDH_9	cattgatgacaagcttcccg
hGAPDH_10	tggaagatggtgatgggatt
hGAPDH_11	ccacttgattttggagggat
hGAPDH_12	cttctccatgggtggtgaaga
hGAPDH_13	gcagagatgatgaccctttt
hGAPDH_14	ttcacacctatgacgaacat
hGAPDH_15	ggctgtgtcatacttctca
hGAPDH_16	gaggcattgctgatgatctt
hGAPDH_17	agttgtcatggatgaccttg
hGAPDH_18	tcatgagtcctccacgata
hGAPDH_19	catccacagtcttctgggtg
hGAPDH_20	agggatgatgttctggagag
hGAPDH_21	ttcagctcagggatgacctt
hGAPDH_22	ttggcaggttttctagacg
hGAPDH_23	caccaccttctgatgtcat
hGAPDH_24	ctgttgaagtcagaggagac
hGAPDH_25	gacaaagtggctgtgaggg
hGAPDH_26	tgtcataccaggaaatgagc
hGAPDH_27	ctgttgctgtagccaaattc
hGAPDH_28	cttactccttggaggccatg
hGAPDH_29	ggctctctcttctcttctgt
hGAPDH_30	aactgtgaggaggggagatt
hGAPDH_31	cctcttcaaggggtctacat
hGAPDH_32	gatggtacatgacaaggtgc

seCLIP-Seq primers

Primer name	5' -> 3'
3SR_RNA	5' /5Phos/rNrNrNrNrArGrArUrCrGrGrArArGrArGrCrArCrArCrGrUrCrU/3SpC3/ 3'
SR_RTv2	5' CAGACGTGTGCTCTTCCGA 3'
SR_DNA	5' /5Phos/NNNNNAGATCGGAAGAGCGTCGTGTAG/3SpC3/ 3'