
Compilation of small RNA sequences

Ram Reddy

Baylor College of Medicine, Department of Pharmacology, One Baylor Plaza, Houston, TX 77030, USA

This is the second collection of small RNA sequences. Small RNAs are broadly defined as the RNAs not directly involved in protein synthesis. These are grouped under three categories: 1) Capped small RNAs; 2) Noncapped small RNAs; and 3) Viral small RNAs. The sequences reported here are based on actual sequence determinations and not on the basis of oligonucleotide catalogs. The references are restricted to the citation of the latest publication in those cases, where several papers deal with one sequence; for some early references, see 1985 compilation of small RNA sequences (Reference 1). The abbreviations used for base and sugar modifications are as follows: m₃G, N2,2,7, trimethylguanosine; A3, 2'-O-methyladenosine; C3, 2'-O-methylcytosine; G3, 2'-O-methylguanosine; U3, 2'-O-methyluridine; F, pseudouridine; A6, N6-methyladenosine; G2, 2-methylguanosine; N, unidentified nucleotide. The nucleotides that are identical to those in the sequence shown in the upper line are indicated by dashes and only the differences from the sequence on the top line are shown. Dots in the middle of a sequence indicate absence of any nucleotide. The references are given in the figure legends and the letters in brackets next to the references indicate the method used in deducing the sequence; C, complementary DNA sequence; D, sequence inferred from the DNA sequence of a putative gene and R, direct RNA sequence. In the case of capped small RNAs, the cap nucleotide is not included in the numbering system. Though earlier publications included cap nucleotide in counting RNA length, to facilitate comparison with genes and pseudogenes, the first transcribed nucleotide is numbered 1. Partial sequences where available are included in references but not in Figures. Minor variants of some small RNAs are not included. The readers are requested to refer to the original publications in all such instances. Any information regarding missing material or erroneous presentation is welcome. The literature survey was completed during January, 1986.

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Human U1      1      20      40      60      80      90
m3GpppA3U3ACFFACCCGCGGGGAG AUACCAUGAUCACGAAGGUG GUUUUCCAGGGCGAGGCUU AUCCAUUGCA3CUCCGGAUGU GCUGACCCCU
Rat U1        -----G-C-----C-----G-----
Chick. U1     -----G-C-----C-----G-----

Mouse U1-A1   1      20      40      60      80      90
m3GpppA3U3ACFFACCCGCGGGGAG AUACCAUGAUCACGAAGGUG GUUUUCCAGGGCGAGGCUU AUCCAUUGCA3CUCCGGA.UGU CCUGACCCCU
Mouse U1-A2   -----U-----C-----C-----
Mouse U1-B1   -----U-----C-----C-----
Mouse U1-B2   -----U-----C-----C-----
Mouse U1-B4   -----G-----C-----C-----
Mouse U1-B5   -----G-----C-----C-----
Mouse U1-B6   -----G-----C-----C-----

Frog U1-A     1      20      40      60      80      90
m3GpppA U ACUACCCUGCGGGGAG AUACCAUGAUCACGAAGGUG GUUCUCCAGGGCGAGGCUU AGCCAUUGCA CUCGGCGUGU GCUGACCCCU
Frog U1-B     -----U-----C-----C-----

F. Fly U1    m3GpppA3U3ACFFACCCGCGGGGAG UUAACCGGAUCAACGAAGGC GGUUCCUCCGGAGUGAGGCU UGGCCAUUGCA CCUCGGCUG AGUUGACCCUC

Human U1      100     120     140     160
GCGAUUCCC CAAAUUGGGAAACUCGACU GCAUAAUUUGUGGAGUGGG GGACUGCGUUCGGCUUCC CCUG-OH (164)
Rat U1        -----C-----C-----
Chick. U1     -----C-----C-----

Mouse U1-A1   100     120     140
GCGAUUCCC CAAAUUGGGAAACUCGACU GCAUAAUUUGUGGAGUGGG GGA.CUGCGUUCGGCGUCUCC CCUG-OH (164)
Mouse U1-A2   -----C-----C-----
Mouse U1-B1   -----C-----C-----
Mouse U1-B2   -----C-----C-----
Mouse U1-B4   -----C-----C-----
Mouse U1-B5   -----C-----C-----
Mouse U1-B6   -----G-----C-----

Frog U1-A     100     120     140
GCGAUUCCC CAAAUUGGGAAACUCGACU GCAUAAUUUGUGGAGUGGG GGACUGCGUUCGGCUUCC CCUG-OH (164)
Frog U1-B     -----U-----G-----

F. Fly U1    UGCGAUUUU CCUAUUGGAAUACUCGUG CGUGUAAUUUUUGUAGCCG GGAUUGCGUUCGGCGGUC CCGA-OH (164)
U1 RNA. Human: Hela cells, 2(R); placenta, 3(D). Rat: brain, 2(R); Novikoff hepatoma, 4(R). Mouse: sperm, 5(D); Friend erythro-
leukemia and K1 cells, 6(R); F9 embryonal carcinoma, 7(R). Chicken: liver, 2(R); oviduct, 8, 9(D). Frog: late gastrula stage
embryos, 10(C); X. laevis, 11(D) 12(D). F. Fly: D. melanogaster, 13(D), 14(R), P. sativum (partial), 15(R), Silk worm: B. mori, 16(R).
    
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1          20          40          60          80          100
Human U2 m3GpppA3U3CGCUCUCCG3CCUUUUU3G CUAAG3AUCAA3 GUGUAGUAC3 FGUUCUU AUCAGUUUUAAU C3UGAUCCUCCUUAUCGGA GGACAAUUAUUAAUGGAU
Rat U2 -----FF-----F-----6-----F--F--F-----F-----F-----F-----F-----
Mouse U2 -----F-----F-----F-----F-----F-----F-----F-----F-----F-----F-----
Chick.U2 -----F-----F-----F-----F-----F-----F-----F-----F-----F-----F-----
Frog U2 -----F-----F-----F-----F-----F-----F-----F-----F-----F-----F-----

1          20          40          60          80          100          110
F. FLY U2A m3GpppAUCGUCUCCGCGCUUAUGG CUAAGAUAACAAGUGUGAU CUGUUCUAUCAGCUUAACA UCUGAUAGUCCUCCUUAUGG AGCACAAAGUUAAACUG AUUUUUGGAA
F.Fly U2B -----G-----G-----G-----G-----G-----G-----G-----G-----G-----G-----
F.Fly U2C -----G-----G-----G-----G-----G-----G-----G-----G-----G-----G-----

1          20          40          60          80          100          110
Amoeba U2 NpppAGAUAAAGAAACAAGA UUUUAUUGUCCACAAAGUU UAGUCCAGUCCUACGGGGU AAGUUCACAUAGAAACUUU UGUUGAAAUUUUGGAGAC UUUUGAGAUU

120          140          160          180
Human U2 UUUUGGAGCAGGGAGAUUGA AUAGGAGCUUGCUGGUCCA CUCCAGCAUGCAUCCUGGUA UUGCAGUACCUCCAGGAACG GUUCACC
Rat U2 -----A-UA-----U-----U-----U-----U-----U-----U-----U-----U-----
Mouse U2 -----AGUA-----U-----U-----U-----U-----U-----U-----U-----U-----
Chick.U2 -----GGGC-----U-----CCC-----C-----G-----U-----C-----G-----G-----C-----
Frog U2 -----A-----A-----G-----A-----U-----U-----U-----U-----U-----U-----

130          150          170          190
F. FLY U2A UCAGACGGAGUGUAGGAGC UUGCUCCACCUUGUCGCG GUUCCCGGUAUUGCAGUA CCGCCGGAUUUUGGCCCAA C (191)
F.Fly U2B -----G-----G-----G-----G-----G-----G-----G-----G-----G-----G-----
F.Fly U2C -----G-----G-----G-----G-----G-----G-----G-----G-----G-----G-----

130          150          170
Amoeba U2 UUAAGGGUGAGUGGCUUAUA GAUCUUCUGUUCUCAUGAUC GAUUAUAUGAUGCAUCCCAA UCAUACUCCGAACCC-OH (187)
U2 RNA. Human: placenta, 17(D), 18(D), 19(D); Hela cells (partial), 20(R). Rat: Novikoff hepatoma, 21(R); brain (partial), 20(R). Mouse: liver, 22(D),
Bird: chicken, liver, 23(D); pheasant liver (partial), 20(R). F. Fly: Drosophila, 24(D), 25(D). Frog: X. laevis, 26(D). Amoeba: Dictyostelium, 27(R).
Plants: wheat (partial), 28(R); pea (partial), 15(R); broad bean (partial), 29(R). Human U2 RNA has other post-transcriptional modifications not
yet localized. The homology between U2 RNA of amoeba and U2 RNA of larger eukaryotes is not established.

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Human U3	1	20	40	60	80	100	110
	m3GpppA	A GACUAAUCUUACAGGGAU CAUUUCUAVAGUGUUVACU AGAGAAGUUUCUCUGAAGGU GUAGAGCACGAAACCACG AGGAAGAGAGUAGCGUUU CUCCUGAGGG					
Rat U3B	m3GpppA	3A3GACUAFACUFUCAGGGGAU CAUUUCUAVAGUGUUVACU AGAGAAGUUUCUCUGAAGGU GUAGAGCACGAAACCACG AGGAAGAGAGUAGCGUUU CUCCUGAGGG					
Rat U3C		-----	-----	-----	-----	-----	-----
Rat U3A		-----	-----	-----	-----	-----	-----
Rat U3D		-----	-----	-----	-----	-----	-----
Dict. U3	NpppA	U GACCAACUCUUAAGGAUC AUUCUAGAGUAUGGUCUAA UAAAAUUUAUCAUAUAUU UUUUCUUUCUUAUAGCUAG GAUGAUGAUCAUAUCACUCU AUACGAACCC					
Human U3	120	140	160	180	200		
	UGAAGCCGGC UUUUCGCGGUUGCUUGGGCUG CAACUGCCGUCAGCCAUUGA UGAUGUUUCUUCUUCUCCGUA UUGGGAGUGAGAGGGAGAG ACCCGGUCUGAGUGU-OH (217)						
Rat U3B	UGAAGCCGGC UCUAAGGUCGUCUUGCG AGCUGCCUUGCCAUUGAU GAUCGUUCUUCUUCUCCUUG GGGGGUUAAGAGGGAGGAA CCGAGUCUGAGUGGA-OH (215)						
Rat U3C		-----	-----	-----	-----	-----	-----
Rat U3A		-----	-----	-----	-----	-----	-----
Rat U3D		-----	-----	-----	-----	-----	-----
Dict. U3	GUGAACCAGU UAUAUUGCAAUGAUUAUUUUAUAUAUAUUG ACCGUUAUAUCAGGAGUA AUUGGUUGUGUGGUGGAUU CGUACUGGU-OH (210)						
U3 RNA, Human: placenta, 30(D); HeLa cells (partial), 30(R), 31(C). Rat: Novikoff hepatoma, 32(R); liver, 33(D). Amoeba: Dictyostelium, 34(D). Silk worm: B.motri (partial), 16(R). Plants: broad bean (partial), 29(R).							
Human U4A	1	20	40	60	80	100	
Human U4B	m3GpppA	3G3CFUUGC3GCAGGCGAGUA UCGUAGCCAAUGAGGUUUAU CCGAGGCGUAUAUUGCUA AUUA3AAACUUFUCCAAFA CCCCGCGUGAGCAGCUUGCA					
Rat U4A		-----	-----	-----	-----	-----	-----
Rat U4B		-----	-----	-----	-----	-----	-----
Mouse U4A		-----	-----	-----	-----	-----	-----
Mouse U4B		-----	-----	-----	-----	-----	-----
Chick. U4A		-----	-----	-----	-----	-----	-----
Chick. U4B		-----	-----	-----	-----	-----	-----
F. Fly U4A	1	20	40	60	80	100	
F. Fly U4B	m3GpppA	3CUUAGCGCGAGGCAUA CCGUAACCAAUGAAGCUCUG CUGAGGCGGUUAUUGCUA GUUA3AAACUUUAACCAAC.C CACGGCAUG.GGACGUGAUAU					
F. Fly U4C		-----	-----	-----	-----	-----	-----
		-----	-----	-----	-----	-----	-----

140
 Human U4A AUUAGUCCGCAUUGGCAAU UUUUGACAGUCUUCAGGAG ACUG(G)-OH (144, 145) F.Fly U4A ACCGUCCACUACGGCAUUU UUGGAGCCCFACGAGGGC UAA (143)
 Human U4B ----- (141) F.Fly U4B -----G----- C- (142)
 Rat U4A ----- (144, 145) F.Fly U4C -----G-----U C-- (143)
 Rat U4B ----- (141) Yeast U4 m3GpppAAUUUUGCCUAAAGUACUA AUCCACGGCAUUAGACAGUA 40
 Mouse U4A ----- (144, 145) CGAAGUCCGAGCUUUUUU UGAACACUGGCUUUUGG UGAUAAAGCGU 90
 Mouse U4B ----- (144) AAUGUGGAGAGAUCAUUUC CGGGUCAUUUUAAAGAACUC GAGUGGAUUG 140
 Chick. U4A ----- (144, 145) CUAGUUUUUUUGAUUAGCUG AAUGAGACUCGAGUGUCAGA AGAUGACUAU 190
 Chick. U4B ----- (141) AUUU-OH (194)
 3H RNA. Human:Hela cells, 35(R). Rat:brain, 35(R);Novikoff hepatoma, 36(R). Mouse:kidney lymphoma, 37(R). Chicken:liver, 35(R). Insect:D.melanogaster, 38(R), 39(D). Yeast:S.cerevisiae, 40(D).

140
 Human U5A m3GpppA3U3ACUCUGGUUUCUUCAG AUCGCAUAAUCUUUCG3CCU U3UFAC3FAAAGAUFUCCGUGG AGAGAACACACUCUGAGUCU UAAACCCAAUUUUUUGAG, CCU
 Human U5B ----- (40) -----U-----
 Rat U5A -----U-----
 Mouse U5A -----U-----
 Mouse U5B -----U-----
 Chick. U5A -----U-----
 Dinof. U5 m3GpppA6U3C3ACAGUGFUCUUCUAC CGAUUCAAFCUFU3CG3CCU3U FAC3FAAAGUUGCCGUGAAU GGGACACAUCAUUGUAAUC UCUCAUUUUUUGAGGGCCU
 Tetra. U5 NpppA3U3CA CAGAUCUCAGCUCAU ACGGUUAAUUUFUC3CC UU3 UFAC3FAAAGAUFACCGUGG CUGGGUUCUACAUGUGAAU UAUUAAAUUUUUUGAGGAU
 Pea U5A m3GpppG A GC CGUUGCAUGAUGACAU AGGGAACUAU3CUFUCG3CCUF3 UFAC3FAAAGAAUACRUGUC AGGCUCACAAUUGCGGCAU AGCGUAGUUUUUGGAAAGAU

110
 Human U5A UGCCUUGGCAAGGCUA-OH (116) Dinof. U5 GCCCCAC-OH (107)
 Human U5B ---UCC-A----- (116) Tetra. U5 GUGUGAAUCCUA-OH (112)
 Rat U5A ---UUCC----- (116) Pea U5 UCUCAAUUUUUGAGGGCCU G-OH (121)
 Mouse U5A ---U----- (117)
 Mouse U5B ---UCCAA----- (117)
 Chick. U5A ---UUCC----- (116)

U5 RNA. Human:Hela cells, 41(R). Rat:brain, 41(R);Novikoff hepatoma, 42(R). Mouse:kidney, 43(R). Bird:chicken liver, 41(R);pheasant and duck liver(partial), 44(R). Dinoflagellates:G.cohnii, 45(R). Amoeba:Tetrahymena, 44(R). Plants:pea, P.sativum, 15(R). Sequences of minor variants are not shown.

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1      .      20      40      60      80      100
Rat U6 XpppGUGUCCUCCGCGCAGCACA UAUACUAAAFUGGAACGAF ACA6GAGA3AGAUA3G3CAUGGC3 CC3C3UGGGCA3GG2AUGAC3ACG CAAAUFGGUGAAGCGUCCA
House U6 -----
U6 RNA. Rat:Novikoff hepatoma,46(R). Mouse:liver,47(R),48(D). Human:HeLa cells(partial),49(R). Rat U6 UAUUUU(U)-OH (106,107)
Dinoflagellates:C.cohnii(partial),50(R). X is an unidentified non-nucleotide. ----- (106,107)

UT RNA. Sea urchin,P.millieris,51(C). m36ppp...UCUUUACAGUUUCUAGAA GGUUCUGGGCCGCAAGUCG GAGCGAGUGCCCAAU(U)-OH
      .      20      40      60      80      100
Rat U8 m36pppA3U3CGUCAGGAGGUUAUCCF UACCUGUCCUCCUUUCGGA GGGCAGAUAGAAAUAUGA UUGGAGCUUGCAUGAUCUGC UGAUUUAGCAUUUCCUGGU
House U8 -----
RAT U8 AUUCAGGACCUGACACAUC CUGAUUGCUUUAUCUGAUU-OH (140)
House U8 -----G-----C----- (137)
UB RNA. Rat:Novikoff hepatoma,52(R). Mouse:Friend Leukemia,53(R).
      .      120      140
Rat U8 AUUCAGGACCUGACACAUC CUGAUUGCUUUAUCUGAUU-OH (140)
House U8 -----G-----C----- (137)
UB RNA. Rat:Novikoff hepatoma,52(R). Mouse:Friend Leukemia,53(R).

Human 7SL-A pppGCCGGGGCGGUGGCGUG CCUGUAGUCCAGCUACUG GAGGCGUGAGGCGUGGAGGAU CGCUUGAGUJCAGGAGUUCU GGGCUGUAGUGCGCUAUGCC GAUCGGGUGU
Human 7SL-B -----
Rat 7SL -----AC-----UG-----C-----
Frog 7SL GCCGGGCGUCUGGCGUGUG CCUGUAUCCAGCUACUUGG AGGCUUGGCGUCUGGUAUCG CUUGAGUCCAUGAGUUCUGG GCUGCACUGAGCUAUGUCA UCGGGGUGCC
F.Fly 7SL-A GACUGGAGGUUGGCGAGCUU CUGUAAUCACGCUUCUGUG AGGUUGAUUUGGGAUGGC CUGAGGUGGGAUCUACUGC GUAGCGGACCAGCUAUGUU GACGGAAAGU
F.Fly 7SL-B -----
Beet. 7SL pGGACUAGCCGGCGGUGUUG GUCCGCGGACACCCUGA GACAGUCAUCAGCGGGGGCC GAACACCGGGCGGUCGCGAC CGCCGGUGUGCGCCCGGAA GCCAACGGUG

Human 7SL-A .      130      150      170      190      210      220
CCGCACUAMGUUCGGCAUCA AUUGGUGACUCCCGGAG CGGGGGACCAACCAGGUUGCC UAAGAGGGUGAACCAGCCCGC CAGGUGGAAACGGGACAGG UCAAAACUCC
Human 7SL-B -----
Rat 7SL -----
Frog 7SL GCACUAGUUCGUUUAU AUUUUUUCCUGGGGAGCC UGGGAUCCAGGUUGUCU AAGGAGGGUGAACCGCCU AGGUCCGAAACGGAGGAGGU CAAAACCGCC
F.Fly 7SL-A .      130      150      170      190      210
CCGCACUAMGUUCGGCAUCA AUUGGUGACUCCCGGAG UCCGUGGCUUCCAGGUUGCC UAAGAGGGUAGAACCGCCCGC CAGGUGGAAACGGGACAGG CAAGAGUUCU
F.Fly 7SL-B -----
Beet. 7SL AAGCCUUGUCCUGGGGAC GGGGUGCGGGGUGCCCGC CGCAGGGGCGUUCCUGUGU GUUUGACGGGCAACCCGC CAGGCACGGAAGUAGGAGCC GGACCACCGA

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Human 7SL-A 240 260 280
 CGUGGUAUCAGUAGUGGA UCGCCGCUUGAUAGCCAC UGCACUCCAGCGGGGCAC AUAGGAGACCCCGUCUCU
 Human 7SL-B
 Rat 7SL
 Frog 7SL
 F.Fly 7SL-A 240 260 280
 F.Fly 7SL-B
 Bacteria 7SL
 IS RNA: (7S RNA; SRP RNA). Human: HeLa cells, 54(C), 55(D), Rat: Novikoff hepatoma, 56(R), Mouse: embryo (partial), 57(C), Frog: *X. laevis* 58(C), Insect: *D. melanogaster*, 58(C), 59(C), Bacteria: *Halobacterium halobium*, 60(D), R).

Human 7SK 1 20 40 60 80 100 110
 Rat 7SK
 Human 7SK 130 150 170 190 210 220
 Rat 7SK
 Human 7SK 240 260 280 300 320
 Rat 7SK
 ZSK RNA: (7-3 RNA; K RNA). Human: HeLa cells, 61(C), Rat: Novikoff hepatoma, 62(R).

Chicken CEH-RNA CUAACAGCCGACGAACCA ACCUCGCGCCUUIAGGAC ACCUACUCCUGAAGGCACC CCCACCCCAUGAUUCCAGC CCUAUCAUAUUGAAACAA 100
 CCAGCCUACUUAUUGGCGCA UUAGCCUAGGAGUAGCGGU AACAGCAACCCUACAGCUG GUCACCUUACUUAUCCACUU AUGUCUACAGCCACAAUGCC 200
 CCUACUACCAUAUACCAU CAUUCUCCGCCCUAACGGCA CUCUCCUUAUCCUACUAC CAUCCAGAGAUGGCGUAG CAUAUACCAAGCUUACGUC 300
 UUCGUCCUCCUUAAGCCU CUACUUAACAGAAUAUUU AAAAAAAAAAAAAAAAAA AAAAAAAAAAAAAAAAAA CAAAAAAAAA 393

CEH-RNA, (Chicken Embryonic Heart RNA), 63(C).

Chicken te-102 UCGUGAGACAGAAUGUUU CGUGGUUGUAGUUUGGG UUGUGCGUUAUUAUUGU GAGAGUUAUUAUUAUUG UAGAGUUGAGGGUUGGGC G
 Chicken te-89 AAGAGAGUAGAGUUUGU UAUUGUUGUUUGUUGUGU UGUUGUAGUUAUUGGACAA UAUUCCAAGUUAUACGCAA ACUGAGACA
 Chicken te-90 UUGAUUGUAGGAGGUGA GAGCGUAGUUGAGUUGU AUACAGAUUGCGGUUCU UAGGAUCUUAUGGUUUG CUUGCCGACA
 te-RNAs, (translational-control RNAs). Chicken embryonic skeletal muscle, 64, 65(R).

E.coli 4.5S pGGGGUCUCUUGGUUUCUCC CGCAAGCGUCUCUGUUUAC CAGGUCAGGUCGCGAAGGAA GCAGCCMAGCCAGAUAGCGC GUGUGCCGGGAUGUAGCUUG 100
4.5S RNA. E.coli MRE 300,75(R),76(R),77(D). CAGGGCCCCACCC-OH (114)

E.coli. 6S pAUUCUCUGAGAUGUUCGCA AGGGGCCAGUCCUUGAGC CGAUUUAUCUACCAAGA AUGUGGCGCUCGCCGGUUGG UGAGCAUGCUGGGUCCGUCC 100
 GAGAAGCCUUAAACUGCGA CGACAUUCACCUUGAAC AAGGUUAAGGUUACAGC CUGCGCGCAUCUCGGAGA UUCC-OH (184)

6S RNA. E.coli MRE 300,78(R). A

E.coli. 16S pUAAAUCAUAUAUAUCU UAAGUUAUUGACAGACUGA AUGUAAACAACAACUUA CUCGCAUAUAUAUAUCUUA 100
 UUAUAUCCGUCUAUAUCU CUGAUGUCUGUUUACCCU AUUUCACCGUAUCCUGGC AUUCGGUUUUUUUU-OH (174)

M13-RNA. (mRNA-interfering complementary RNA). E.coli MC 4100,79(D).

VAI RNA pppGGGCACUCUCCGGUCUCUG GUGGAUAAAUUGCAAGGGU AUCAUGGCGGACGCCGGGG UUCGAACCCCGGAUCCGGCC GUCCGCGUGUACCAUGCGG 100
VAII RNA pppGGUCUCUCCUGUAGCCGG AGGUUAUUUCCAAAGGUU GAGUCCGAGACCCCGGUU CGAGUUCGGCGCGCGCGGA CUGCGCGAACCAGCGGGUUUG

VAI RNA UUAACCCCGGUGUGAAC CAGGUGUGCGACGUCAGAC AACGGGGAGCGCUUUU-OH (160)
VAII RNA CUUCCCGUACUGCAAGACC CCGCUUGCAAUUCCUCCGG AAACAGGAGAGCCUUU U-OH (161)

VA RNAs. (adenovirus-associated RNAs). Adenovirus, 80(R),81(R),82(D).

EBER-I RNA pppAGGACCUAGCUGCCCUAGA GGUUUUCUAGGGAGGAGAC GUGUUGGUCUAGCCACC GUCCGGUUAACAAGUCCGG GUGUGAGGACGGUGUCUGU 100
EBER-II RNA pppAGGACAGCGUUGCCUAGU GGUUCCGACACACCGCCAA CGUCAGUGGGUGGUACCG ACCCGAGGUACAAGUCCGGG GGAGGAGAAGAGAGGCUUCC 100

EBER-I RNA GGUUGUUCUCCAGACUCUG CUUUUGCCGCUUUGGUGCA AGUACGCGUGGUGUCCGC AUGUUUU-OH (167)
EBER-II RNA CGCCUAGACAUUGCAAGU CAGGAUUCUCUAUCCUCU GGGAGAAGGUUAUCCGCU GUCCGCUAUUUU-OH (172)

EBER RNAs. (Epstein-Barr encoded RNAs). Epstein-Barr virus, 83(D).

VSV RNA (+ strand) pppAGGACAAACAACCAU AUUAUCUUAAGGUCUAG GAGAAACUUU-OH (50)
VSV RNA (- strand) pppAGGACCAACAACCAU UAAAAUAAACCAACAG AGGUUCUUAAGAU-OH (54)

VSV RNAs. (Vesicular Stomatitis Virus RNAs). Vesicular stomatitis virus, 84(D).

Plasmid R100 RNA pppAUAGCUGAUUGUUGCUAU ACGUUUAAGGGGCCCGG UAAUCUUUUUGUACUCCGAA AGUUGAAGAAGAUUUCGG GGUUUUUCGUU-OH (91)
RNA I. Plasmid R 100 RNA I, 85(D, R).

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