

## Arabidopsis snoRNA gene sequence alignments

U14a ----gttAA**TGATG**ATAAAATCCA--AAGGCTTGTTCCTCAAA-CATTCGCAGTGGCCGCTAAGAGCTTTCGCCTTCGCCAGGCTTGAGAGTTAATGCTGTTTT-ATCCTTCCTTGATGT**CTGA**aac  
 U14b ---attggt**CGATG**AGGATAAGATGAAGGCTTGTTCCTCAAAACATTCGCAGTGGCCGCTAAG-GCTTTCGCCTTCGCCGGGCTTGAGAGCTTATGATGTTTT-ATCCTTCCTTGATGT**CTGA**Gaccaat  
 U14c ----tcggt**TGATG**AGGATTATATTAAGGCTTGTTCCTCAAAACATTCGCAGTGGCCGCTAAG-GCTTTCGCCTTCGCCAGGCTTGAGAGCTAATGCAGCTTT-ATCCTTCCTTGATGT**CTGA**Aaccga  
 U14d aaagatcAA**TGATG**ATAAAC---TTAAGGCTTGTTCCTCAAAACATTCGCAGTGGCCGCTAAG-GCTTTCGCCTTCGCCGGGCTTGAGAGTTAATGCAGCTTTTATCCTTCCTTGATGT**CTGA**gatcctt

U31a tttgagGAAAG**TGATG**ATATGAAATGTCGCCCCAGG**CTTA**ATCTGCATCCATTACGATGGTTGTAACATGGTGATTGACTATTTTTGT**CTGA**TTCTctcaaa  
 U31b -----gaaAG**TGATG**ATAAGGAATGTCGCCCCAGG**CTTA**ATCTGCATCCATTACGATGGTTGTAACATGGTGATTGACTATCTCTGT**CTGA**ttc

SnoR4a ggaTAT**TGATG**AAATGGCAATAATGTTTTGTGACACCCAGT**CTGA**TCTTCGTGATTGATTTGCCATATTTTT**CTGA**tcc  
 SnoR4b ggaTAT**TGACG**AAATGGCAATAATGTTTTGTGACACCCAGT**CTGA**TCTTCGTGATTGATCTGCCATATTTTT**CTGA**tcc

U33.1a ----gaggAA**TGAGG**ATGTAATTCATACGTCTGCAAACTGAAATACAGTGTGATACAAT-GA-CATGCACTACCAT**CTGA**cctc  
 U33.1b ----gaggGAT**TGAGG**ATATAATTCATACGTCTGCAAACTGAAACACAGTGTGATACAATTGA-CATGCACTACCAT**CTGA**cctc

U51.1a --gcaatcAG**TGATG**AAATATGTCAAATTCATGATTATACAATGATTATTATAATCACTAGATCACCATCTTTCGG**CTGA**gattgc  
 U51.1b ctgcaatcAG**TGATG**AAATATGTCAAATTCATGATTATACAATGATTATTATAATCACTAGATCACCATCTTTCGG**CTGA**gattgcag

snoR5a GCCTATGGTATCTGATGTCCAAAGTTTGATAATTGTGTTTGGACATTT**CG**TTTTTCTTAGGC**AGAA**GTGATTT**CAG**GCTT**TG**CGACACTGTAGCTTATCACATAAGCTACCTGTT**ACT**TTTTAATACCTGGTT**ACATCT**  
 snoR5b GCCTATGGTATCTGATGTCCAAAGTTTGATAATTGTGTTTGGACATTT**CG**TTTTTCTTAGGC**AGAA**GTGATTT**CAG**GCTT**TG**CGACACTGTAGCTTATCACATAAGCTACCTGTT**ACT**TTTTAATACCTGGTT**ACATCC**

U34a --gagccAG**TGATG**ATTGAAAAAGA--TTGTCTACATTGTT**TGAT**-GTACCACTGAAATGAATTCCTTAATTAGT-----**CTGA**ggctc  
 U34b -aagccTAT**TGATG**ATTCAAAT---TTGCCTACATTGTT**TGAT**-AAACCAATGATATAACTTGTACAAAATGTT-----TT**CTGA**ggcctt  
 U34c tgaggctGG**TGATG**ATGTTTCATATCTTTGCCTACATT**CG****CTGA**TCAAAGCTATTTTTGGCTTTGAACAAGT**GAG**TGAATGATAAAT**CTGA**agcctca

U36a.1 tggcAA**TGATTA**TAAACTTACCCGCGCT**CTGA**GATTATTCAATGAAGTAGATACGGTAAATACA-TGGTTGAATTTCTTAAT**ATGA**gcca  
 U36a.2 tggcAA**TGATTA**TAAACTTACCCGCGCT**CTGA**GATTATTCAATGAAGCAGATACGGTAAATACA-TGGTTGAATTTCTTAAT**ATGA**gcca  
 U36a.3 -gctAT**TGATTA**GAAAAATATCCGCGCT**CTGA**GACTTAGTTCTATGAAGTATATACGATAATCAATGGTTGAATTTCTTAAT**ATGA**cgg

U38.1 ----**TGATGA**ATTGTAACAGCTTGATACGCCAGTCTCGCT**CAGATA**ATTCCTGATCGAAAAGCTGATTCTTATCCGAGCCTTTCATTGCTATTTTGTCTTTCT**CTGA**  
 U38.2 ----**TGATGA**ATTGTAACAGCTTGATACGCCAGTCTCGCT**CAGATA**ATTCCTGATCGAAAAGCTGATTCTTATCCGAGCCTTTCATTGCTATTTTGTCTTTCT**CTGA**  
 U38.3 ggcAG**TGATGA**-TTAAA-----CCAGTCTCGCT**CAGATA**ATTCCTGATCGAAGAACTGTATAC-----CAAAAACT**CTGA**gcc

SnoR6.1 gaaTGT**CGATG**AGGATCTAATCCAATCTTACGAGGTGCAGTGGAGCTGAGACCTGTTTTACAGGGAGAACCCTTGGCAGAAGCTGTAATTTCT**TTGA**Cttc  
 SnoR6.2 gaaTGT**CGATG**AGGATCTAATCCAATCTTACGAGGTGCAGTGGAGCTGAGACCTGTTTTACAGGGAGAACCCTTGGCAGAAGCTGCAATTTCT**TTGA**Cttc  
 SnoR6.3 c**TGATG**ATGATATAATCCAATTT--CGAGGTGCAGTGGAGCTGAGACCTGTTTTACAGGGAGAACCCTTGGCAGAAGCTGTAATTTCT**ATGA**ag

U59a gaaattgcctcCGA**TGATG**ATCAATCATAACTTTCGTTCT**CCGAG**ATTTTATCATGCGGAGAAATATGGAGACCTGA**ACTGA**GCTgaggcaatttc  
 U59b -----ctcttAT**TGATG**T-----CAAACTTTCGTTCT**CTGA**GATTTCAATATGCTGAAAAAATGGAGACCTGA**ACTGA**aa-gag

U15.1a ctcAG**TGATGA**AGAAACAATAGATGACGAGT**CCGAT**GAAATCCATTCATAAAATCGTGGGGACAAACGAGGCATTTGT**CTGA**gag  
 U15.1b ctcAG**TGATGA**AGGAACAATAGATGACGAGT**CCGAT**GAAATCCATTCATAAAATCATGGGGACAAACGAGGCATTTGT**CTGA**gag  
 U15.2 ctcAG**TGATGA**ATAC--AGATGACGAGT**CCGAT**GAAATCCATTCATAAAATCATGGGGACAAACGAGGCATTTGT**CTGA**gag

SnoR7.1 --aaggca**TGATGA**GGATTGTTTTATTGTCATCTGATTCATTATGATGAATCTATACCTCCTACTCATT**CTGA**Gtgcctt--  
 SnoR7.2 aaaaaggca**TGATG**AGGATTGTTTTATTGTCATCTGATTCAT--GATGAATATATACCTCCTACTCATT**CTGA**Gtgcctttt

SnoR1a ggcGAT**TGATG**ATCAATGCCTAATTTCTGACACCTCTTGT**ATGA**GAGAGCTTGATAACCTCTCTTTGAGCACATTATGCAATACT**CTGA**gcc  
 SnoR1b ggcGAG**GATGA**ATAATGCCTAATTTCTGACACCTCTTGT**ATGA**GAGAGATTGATAACCTCTCTTTGAGCACATTATGCAATACT**CTGA**gcc

snoR8a gagtgcTAT**TGATTG**TAAAAGTAAATTCCTCGT**ACTGA**AGCCAAATGGCTTGAA--AGACTCACATTACTACCCATAGAAT**ATGA**gcactc  
 snoR8b -gagtgcTAT**TGATTG**TAAAAGTAAATTCCTCGT**ACTGA**ATGCTCATAAGGCATGATAGACTTACATTACTACCCATAGAAT**ATGA**gcatc

SnoR9.1 ---agaaTAT**TGATG**AAAGTTGT--ATATCGGTGATG--GTCTTTTGATTCA**ATGA**TCGACAAAAATTTCAACTCGCTACGTTCTTT**CTGA**ttct  
 SnoR9.2 tgaagaaT**CTGA**TAAAGTTGTCGATTATGTTGATGATTTCTTTAGATTCA**ATGA**TCGATAAAAATTTCAATTCGCTACGTTCTTT**CTGA**ttcttca

SnoR10.1 ctggagaA--**ATGATGAGA**--AATCAGATAA-ATCCTTAGGACACCTT**CTGAC**CACAGATT-CTGTGTATGAGAATGACATCATATT**CTGA**tcttcag  
SnoR10.2 -tggagaaAT**ATGATGATA**AATAATCAGTAAATATCCTTAGGACACCTT**CTGAC**CACAGTTACTGTGTATGAGAATGACTTGTTAAT**CTGA**tcttcca

SnoR11 tggtt**TGAAGA**TAGGTTACCTTAATTCTCGGTTTATTAAGTGGATAAATCAAT**TTGAA**TCTACGGATGTTCTTAAGCTGCAAAGAGAGATTGTGATT**CTGAGG**Caacca

SnoR12.1a -----tgagG**ATGACG**AAAAAA-TCATTCGGATTCCCT**TTGA**ATTCCTC-----CGGGAAAC-ATGTGATTATATAATCAGCTACTT**CTGA**ctca  
SnoR12.1b tgatggtaaaaG**ATGACG**AAAAAAATCGTTCGGATTCCCT**TTGA**ATTCCTC-----CGGGAAAG-ATGTGATCAC-AAACCAGCTACTT**CTGA**attttaccatca  
SnoR12.2 -----tgagGG**TGATG**AAAAAAATCATTCGGATTCCCA**ATGAT**TCCCTTACGTACGGGAAATATGTGATTATT-TACCAGCTACTT**TTGA**ctca

U24.1 aggccAG**TGATGT**AATAAAAAATTTGCTACT**CTTGA**TGAAGAACTTTGTCTTTTCAGTTGATGATTGGTTTACCACCAAGATCT**CTGA**ggcct  
U24.2 ---ccgg**TGATGT**AATCAAATATTTGCTACT**CTTGA**TGAAGAA-TTTC----TTCAGTTGATGATA--TTTACCACCAAGATCT**CTGA**ggcc

SnoR72Ya tgggaT**ATGATG**ACAAAAATACGATATCTCTA--AGGCTAATTGCTGTGCGGATGAAATGTATTTGACGTCAGT**CTGA**tccca  
SnoR72Yb -gggaAG**TGATG**AAGATATATCAATATATCATAGGCACATGCAATGCTGAACGATATATATTTGACGTCAGT**CTGA**tccc  
SnoR72Yc -gggaAG**TGATG**AAGATATATCAATATGTCATAGGCACCTTGAATGCTGAACAATATATATTTGACGTCAGT**CTGA**tccc  
SnoR72Yd --ggaa**ATGATG**AAG-TATATCGATATTTTCAGAGCGTATGCAATGCTGAACGAAC--TATTTGACGTCAGT**CTGA**ttcc

U49.1 -ttcctAA**TGAAGA**AAGCAATCCCATA-GATAGGAAGTGCCGT**ATGAC**ACTTTACACAACAGCG-----GACTGAACGAGGATGCATCCGGTGA--TTTCTCATCCCCGAGCAGTTTTT-----  
U49.2 -----cg**ATGAAGA**AAGCAATCCCATA-GATAGGAAGTGCCGT**ATGAC**ACTTTACACAACAGCG-----GACTGAACG-CGATGCATCCGGTGAATCTCCCAATCCCCGATCAGTCAAACACGAACCTCGTAT  
U49.3 aaacccG**ATGAAGA**AAGCAATCCCAAAAGATAGGAAGTGCCGT**ATGAC**ACTTTACACAACAGCTAGCGTGACTGAATT-----

U49.1 -----CCTGATCCGTTTACGGTTCGGGTTTCGAGCTGCTCGGTTCGGGTTATCTACCGTACTTCCCACCGTCTGTGTCCACTGTGTGGGTGATTTGACACGGGTTTCG**CTGA**GGggtaa  
U49.2 CCGGATCCAAACCCCGGATCCGTTTACGGTTCGGGTTACTGACTCCTCGGCCGGGTTCTTACCGTACTTCCCACCGTCTGTGTCCGTTGTGTGGTTGATTTGACAAGGGTTTCG**CTGA**GGG  
U49.3 -----CGTCTGTGTCTGCTGTGTGGTTGATTTGACAAGG-TCCG**CTGA**gggttt

SnoR2.1 ATGTCCGATGCCACGTCGACGGTAGC-----TATTTTGGCAATGATCCT---CGATGCTACATTGGACAT**AGACAAA**TGTACGTGTTTCGCTTACTGATAGGAACCTGTGGATCTT  
SnoR2.2 ATGTCCGATGCCACGTCGACGGTAGC-----TTTAGGGCAATGATCCT---CGATGCTACATTGGACAT**AAACAAA**TGTACGTGTTTCGCTTACTGATAGGAACCTGTGGATCTT  
SnoR2.3 TTGTCTGATGCCACGTCGAAGGTAGCTCTTTTTTTGGGGCAATGATCCTAACCTCGACGCTATATTAGACAT**AAACAAA**TGTACGTGTTTCGCTTACTGATAGGAACCTGTGGATCTT

SnoR2.1 GATTCTATA--CGATCTCCGAGCCATTTTCGGCGATT**TACATTT**  
SnoR2.2 GAATTGATTTACGATCTACGGAGCCATTTTCGGCGATT**TACATTT**  
SnoR2.3 GTTTTA-----CGATCTACGGAGCCATA---GCGATT**TACAATT**

SnoR77Y.1 ccG**ATGATG**ATTATTGCGAAAAATATGGAATTACCGT**CTGAG**TTAATTTCTTTGATGTTAAAAACGCTGGCTAA**CTGA**gg  
SnoR77Y.2 accG**ATGATG**ATTATTGCTAAACTATGGAATTACCGT**CTGAG**TTTA-TTCTTTGACGAGAAAAACGCTGGCTAA**CTGA**gggt  
SnoR77Y.3 ACCG**ATGATG**ATTTTTGCTAATCTGTGTG-----

SnoR13.1 gatcaG**TGATG**AGCAAATCTGCAACAAT**ATGAT**GGAGAAATCTTTATGATCTTTAGTATTTAAGTCT**CTGA**gatc  
SnoR13.2 agatcaG**TGATG**AGGTAATACTGCAACAAT**ATGAT**GGAGTAATCTTTGTGATTATTAAGTATTTAAGTCT**CTGA**gatcct

U18.1 gagaG**TGATG**ATAACAAATTTGGTCCGTGTTT**CTGA**TTAACCGTGACTGAGAATTTATTAACCAA**ACTCTGA**tctc  
U18.2 gagagaT**ATGATG**ATCAACAAATTTGGTCCGTGTTT**CAGAT**TAAACCGTGACCGAAAAAATCTTAACCAA**ACTCTGA**tctctc

U54 **TGAGAA**CTTTGGTTTTTGGCTCTGTGATTGCTTCGCCTTATTTGGCAATATACGCTATT**CTGA**

SnoR58Y.1 acttctgcG**TGATG**ATCTTTTGAATAAAATTCACATGTCAGACTT**CAGAG**ATCTTTTGATCTATGAGAAAAACATTCATAAT**CTGA**gcagaagt  
SnoR58Y.2 tcttctgcG**TGATG**ATTTTATGA--GAAATTCACATGTCAGACTT**CAGAG**ATCTTTGTAATCTATGAGAAATAAATTCATATAT**CTGA**gcagaaga

U61 agcG**TGAGGA**AAAAATCGTGTGCCAGAGATGGTTAATCCATCGCTGACGGTAATACACAACCTCTAAGAAGTT**CTGA**gct

SnoR14.1 gagtogaG**TGACG**ATAGAAATTCACAGTCTGTCAATCC**ACTGATA**-----TATGTGATGTAATTGTG--TTCTCGACAGGTT**CTGA**tcgactc  
SnoR14.2 gaG**TGACG**ATAAAGAATTCACAGTCTGTCAATCC**ACTGATA**CAACATTTGAGTGTGTTATTGTGATATCTCGACAGGTT**CTGA**tcc

U55 tgaatctgagta**TGGATGA**ATCTCATATATTGATGTTATTTACTACTGAAATTACATTGATGTTTTAT**TTCACCTTGGAGAACTGA**tactcagattca

U16 ctgggcaT**ATGATG**AAATATATTTTCATGGGTAATTTGCGT**CTGA**TTCTATGTGATGCTAACTTTTATGATTAT**CTGA**tgccag

SnoR15 tggggcaga**TGATG**ATTATCATAAAACAAATGGGTAATTTGCG**ACTGA**TAATATTACATTGATGTGTTTTTTCACCTTGGAGAA**ACTGA**tgtcccca

SnoR16.1 tggcaAATGATGAGTAGA--ATCTTATCCT-ACACA**CAGAT**GTATCAGTGTGACTACCAATCTCTGCTTATTAT**CTGA**tgcca  
SnoR16.2 tggcaAATGAAGAATTGATTAATTTATGCTTAACCA**CTGATG**-AACAGTGTGACAAAAATCTCCGCTTATTAT**CTGA**tgcca

U43.1 agaaacAATGATGAGATACTTGCAGACGGGCGGT**CTGAA**AATFGATGTCGTGTTGATTGTCIGCCATAAGCTACATAAGCATTCT**CTGA**gtttct  
U43.2 atcaaaacAATGATGAGATATTAGCAGACGGGCGGT**CTGAA**-TTGATGCCGTGATAGATTGCTCGCCATCGCTACTATGTAGCTTCT**CTGA**gtatttgat

U79.1a gagAATGATGACTAATGTCTAGATGGGAATCTCT**CTGA**TGCATATCTCACAGACTGTTTATCAACTTTGATCTAGTATTTCTGTTTTGCTTCGTTTT**TGATA**ctc  
U79.1b **TGATGACTAATGTCTAGATGGGAATCTCTCTGATG**CGAC  
U79.2 tata**ATGATG**ATTAA-GTCTAGATGGGAATCTCT**CTGATG**CA-----CCTTTTAAATTGTTAATGATGTTG--TTTTGTG-----CCGG**TGATG**tata

SnoR17 tcaTAG**TGATGA**AATTATATCACAA**TTGTC**ACTAC**CTGAGG**CAATATCTTGATTCGTTTTTTTTTTTTTTAGATTTTGTTTCTATCACCTTACTTCTTTAGGAG**CTGA**tga

SnoR18a agagaTA**TGATGA**TGGAATTAGATTTCCCTATTTGGT**TTGAT**CGCCGTATGATGGCATCTTACGTATTAGCTCTAT**CTGA**tctct  
SnoR18b gaagagaatga**AGTGATGA**TTGAAC**TTTGT**TTCCCTATTTGGT**TTGA**TCGCCGATATGATGGCA--TACGTATTAGCTCTAT**CTGA**Tcattctcttc

SnoR19.1 gaagaac**AGTGATGAGT**CAGTTTACAGACCTGTA**AATGA**TTGCCGTAATGATCGCATTATTATGAACATCTAAGGG**ACTGA**gttcttc  
SnoR19.2 gaagaac**AGTGATGAGT**CAGTTTACAGACCTGTA**AATGA**TTGCCGTAATGATCGCATTATTATGAACATCTAAGGG**ACTGA**gttcttc

SnoR20.1 aagcc**AGTGATGA**TTAGATTC-AATGGTTGCTGAACATTC**CAAT**-----GTTGAAAAGC-ATCTA**ACTTGACT**AGGACGGT**CTGA**aggctt  
SnoR20.2 aggc**TGATGAAG**ATTAGATTAATGTTACTGAAATTT**CAATA**AGTGTGTTGATATACTATCT-TCTTG**ACTAGGACTG-CTGA**aggct

SnoR38Y.1 tgg**ATGATGAG**AAACAAAAATCAAAATACAGTTATCCCTGG**CTTAGGG**TTAAAGCCCGTTGCTGAGTCTTTTGTAAAT**CTGA**ca  
SnoR38Y.2 ttgtg**ATGATGAG**AA-CAAATATGAAAAACAGTTATCCCTG**CTGAGG**ATTTTAAATCCCTTTGATGATTCATTTGTAAAT**CTGA**cacaa

SnoR39BYa tagccAAT**GAGGAC**ATCAGATTATAAAAGAACCCATCTTTCCGG**ACTGAT**TAAAC-----ATTGATGATACTTCTGCAAT**CTGA**ggcta  
SnoR39BYb agcc**GATGTGGA**TATCAGATTATAAAAGAACCCATCTTTCCGG**ACTGAT**TGACTTCTTTTGAAGTTTGC**TGATACTTCTGCAATCTGA**ggct

SnoR21a aaagcc**AGTGATGA**ACGAGAATGTCATGCACCA**CTGA**-TATTAGTGTGATAACCATCTCTAACCATATTTTCT**CTGA**gccttt  
SnoR21b aggc**TGATGAT**TTGAGAA**TGTCATG**CACCA**CTGA**TTTTTTGTGCTGATAATCATCTCTAACCATATTTTAT**CTGA**gcct

U52.1 aaagggtttaTGG**TGATGAA**ACGAATATTTCTG**TGACTAGAGTTT**CAGATCTGGGCTCTTCCACCAGAAATTTGAAGAAACAACCCTTGCTGT**CTGA**Gtaaatccttt  
U52.2 aataTGG**TGATGAT**AACAAGATATTG**TGGACTAGAGTTT**CAGATCTGGGATTTCTTCCCAGAAAGTTGAAGATTAACCCTTGCTGT**CTGA**Gtatt  
U52.3 aataTGG**TGATGAT**AACAAGATATTG**TGGACTAGAGTTT**CAGATCTGGGATTTCTTCCCAGAAAGTTGAAGATTAACCCTTGCTGT**CTGA**Gtatt

SnoR22.1 gccTAT**TGATGATA**---AAAACAATATCTTAGCGGATTT**CAGTGAG**GGTTTTTTTTTAAATCAATGATCTGAA-TTGT**TACACACACTGA**ggc  
SnoR22.2 atgagc**TGATGATG**AAAAAAAACAATATCTTAGCGGATTT**CAGTGAG**GGTTTTTTG---AATCAATGA**ACTGAATTTGTTACACACACTGA**Agcttat  
SnoR22.3a aagcTTAT**TGATGATG**AG---AAAACAATATCTTAGCGGATTT**CAGTGAG**GGTTTTTTG---AATCAATGATCTGAAATTTGTT**TACACACACTGA**Ggctt  
SnoR22.3b aagcT**GATGATGATA**---AAAACAATATCTTAGCGGATTT**CAGTGAG**GGTTTTTTG---AATCAATGA**ACTGAATTTGTTACACACACTGA**agctt

SnoR23.1 tgg**GATGATGATA**AAATAGCACGAAGGTGCGTGAAGGGCAGTGGACA**AAAGCAATG**AAATTTGTTTTGCCGTGAGCTCTCTTAAATA**AAACGACTTCTCCTTCCACTGA**gca  
SnoR23.2 atgc**AATGATGAGATA**AAAGCACGAAGAGTGTGAGAAAGAGCAGTGGG-----TTTACC**GTGAGCTCTCCTTTA-AAACGACTTCTCCTTCCACTGA**gcat  
SnoR23.3 atgGGTT**TGATGATGATGATG**CAATGATGAGATGAAAGCACGAAGAGTGTGAGAAAGAGCAGTGGG-TTACC**GTGAGCTCTCCTTTA-AAACGACTTCTCCTTCCACTGA**gcat

SnoR24a agc**TGATGAG**AAAGCTAACACGTAAGAAGAGGTATCTCTTTGTGGGGTATTTCTTCAATGAAATACATTTGTT**ACGCTTGGCTTCTGA**gct  
SnoR24b agc**TGATGAG**AAAGCTAACACGTAAGAAGGGTACTCCTTTGTGGGGTGTTTCTTCAATGAAATACATTTGTT**ACGCTTGGCTTCTGA**gct  
SnoR24c **TGATGAG**AAAGCTAACACGTAAGAAGAGTACTCCTTTGTGGTGTATTTCTTCAATGAAATACATTTGTT**ACGCTTGGCTTCTGA**  
SnoR24d tatic**AGTGATGAG**AAAGCTAACACGTAAGAAGAGTACTCCTTTGTGGTGTATTTCTTCTATGAAATATATTTGTT**ACGCTTGGCTTCTGA**gata

SnoR69Y agg**TGATGATGATA**AACATATAATCCAGCTCT**ATGAG**ACCTTTTGTGGTCAAGGAGTATAACTATGTT**CATACATTTATCTGA**Gcct

U29 tggc**GATGATGATA**AACATATTATCCAGCTCATT**ATGAG**ACCTTTTGTGGTCAAGGAAATAACTGTTTTCTATAACGTAT**CTGA**gcca

SnoR25 gttcccT**TGATGAT**TTTAAATCAATACCATGCTAATGTATA**TTGATA**ATTTTTTATTTGATTTATAAGT**GATTTGCTGA**gggaac

SnoR53Y attcccT**ATGATGGTAATA**ACCATGCTAATA**CTGATG**TCTTGTGACTGAATCAAAGTTATGTGT**CTGA**gggaat

SnoR26 gagcatcGG**TGATGA**ATCCATGAAAAATTTGTTATCCTTGCACTTTGATTTGCTAGTGAAGAAACAAATGGGGTTTTCGATGT**CTGA**gatgctc

SnoR27 attggat**CGATGAT**TTGATTAGTTAAAT**ACTGCGT**TATCTTTCTGCAATCTCCTATAAGGATTTGAAGACAAATCATGAAAA**ACTGAG**atccaat

SnoR68Y tcagatcGATGATGCATATTTAAACTGCGTTATCTATCTTAAAATCTCCGAAATAGGAGTTGCAGACACTAAACAGAAAACGCTGAgatctga

SnoR28.1a aggTGATGACAATTTCCCCAGATGATCGAATCAGATTATACTGAGCGAATAGAACTTCTCTTC---GGAGGAAGTC-AAGCCAATTAGTCTGATcct  
SnoR28.1b aggTGATGACAATTTCCCCAAATGATCGAATCAGATTATACTAAGCGAATTTTATTTCTTCTCAACAGAGGAAATC-AAGCCAAT-ATTTCTGAAcct  
SnoR28.1c ggaGGTGATGACAATTTCCCCAAATGATCGAATCAGATTATACTAAGCGAATTTTATTTCTTCTCAACAGAGGAAATC-AAGCCAAT-GTTCTGAatcc  
SnoR28.2a ggaGGTGATGATTAATTTCCCCAGATGATCGAAGCTGATTATACGAGCGATTTTATGTTTCTCTTTTTCAGAGAGATTCCAAGCCAAT-TTTCTGAatccc  
SnoR28.2b agatggaaGTGAGGATTAATTTCTCAAATGATCGAAGCTGAACAATCTGAGCGAATTGA--TTTCTCTTTTTT-GAGAAAATCCAAGCCTAT-TTTCTGAatccatct

SnoR29.1 ggcAGGATGACTCGGAAAT-TTCAAGCTCAACAGACCGGAAT-TAGGCGTTTCTTCCAATTTATTGGTTGAGTCGTTTCTGTGTCGATAACCCCGTGATCTGAgcc  
SnoR29.2 cgTGGTGATGACTTGGAAATATTCAGCTCAACAGACCGTAATGTAGGA-TTT-TTCTA-----GTGGAAGTCTTGCGTGTGTCGATAATCCCGTGACTGAgc

SnoR30 taaTGATGATGGGGATTTTGGAGATTACGATGAGGATGTACAGCTCCCTCTTCTGATTAGCTGAAGAGAATTGCTGGCAGAATCGAACCTAAATCACTAGCCACTACTGAGtta

SnoR31 tagatAATGATGAGCAAAATTAATCTAATCCAACACTTGATCTGAGAGATACTATGTGCATCTCCAAGTGAAGTTACAACCTGTTAGCTTCTGAatcta  
TAATCCAACACTTGATCTGA

SnoR32.1 ggacAGTGACGATTGATATT-AAGGTCTCGTTCGTCGTAACAAACGGCCGTAAAAAGCCTATTTGCCGACCATTCTGTTATATCACCACCCATATTCTGAgtcc  
SnoR32.2 ggacAGTGACGATTGATATTAAGGTCTCGTTCGTCGTAACAAACGGCCGTAAAAAGCCTATTTGCCGACCATTCTGTTATATCACCACCCATATTCTGAgtcc

U27.1 attaatCCTGTTGATAAACTCTAATCTTCTCTATGAGGCCCTTTTTCAATTACCTTTCAAATCCGATTTCTGATTTATTTCTTTGGTTCTGTTTTGGTTGATTTA

U27.1 GTGGCCTATGATTTAAATGATTATAGACAAGCATATGTCTGAattaat  
U27.2 ATAGACAAGCATATGTCTGAA

U80.1 tcaAGTGATGATTGATAACGCATAGTTTCAGATGATAAAATCTATTATGATTAACATCTTC-AGCATAGTCTTTTCGCTCCTATCTGAatga  
U80.2 aggttcaAGTGATGATTAATAATGCATAGTTTCAGATGATAAAATCTATTATGATTAACATCTTC-AGCATAGTCTTTTCGCTCCTATCTGAatgacct

U56 aaaCTGATGAATGCGATCCTGGTAATTTTATTGTACCTGTTTGTAATAAATTTGGATTTAGAAGAACTTTCTATTTTCTGAatt

SnoR41Y agtgaaggcAGTGATGATTAATAAACTACCTATTTTATGAGTAATTTCTCTGATTAGAAAAATTTACCAATGGATCCTTCTGAgccttcaat

SnoR36 ttaagATTGATGACGATTGAGAAAAGAGCCGATGGAATGATGATAACGATTTTTCGGATATATTAATTTATTTCTGTGACCAAAACTCAGACTACAATTATCTGAatcaat

SnoR33 gactGTGATGGATCCTCCTCAGAGGCTGTTTCTGAAAGGTCCGACGACGGTCTCACAGATCTTTTTTGCACGAGCCGTTGAagtc

SnoR34 gatAATGATGATGAAAGATGATTCATAGAACAAATCCAACCTCTGACCATCATTGATGATCTTACCATCATGCACTACCATCTGAatc

U37 aatgcgAATGATGAATATCAAATTTATTTATTTCTTCACTTTGATCCGATTTGGTAATTTATTTATCTTGTGGACAATATTCAGATTACTGAagcatt

U35 tcaAGTGATGAGATTTGATCTAAAATTTCTCACGACGGTCGTCGAGGCGCTTTTGTGGCCGATTGATGTACCGATCACTCCTCTCTGAatga

U30 ggtgcAGTGATGATGGGTATAAATCTCGTTAATCTGAATTTTTGTTAATGAAGATACTTACTTCCCAACCATTCATTAATATCTGAgcacc

U53 actgAGGATGATGATATTGAGGCTGCTGTTCCATTGGCTGTCGAGATACCTGCAGTTCGTGATCGTGACCTGTAAGTTTTGAGGCAGAGCGTTTAGTTTCGGAAGAAGCTGCAGGTTCTGAcagt

U36 ggaGCAGATGATGAATATTTTGCACACTACAACGGTGCTTTCTCTATAACTCATGCGGATTATATAAATTCGAGCTTTTTAAAACTGATGtcc

SnoR35 TGATGAAAAACTGGAGACGCTGCCCCAGACTGACCGGAGAAAGAAGAAGTAAACGTCCTCCCTGAACCGTCTGA