

Identification of the miRNAome of early mesoderm progenitor cells and cardiomyocytes derived from human pluripotent stem cells

Ximena Garate¹, Alejandro La Greca¹, Gabriel Neiman¹, Carolina Blüguermann¹, Natalia L. Santín Velazque¹, Lucía N. Moro¹, Carlos Luzzani¹, Elida Scassa¹, Gustavo E. Sevlever¹, Leonardo Romorini¹, and Santiago G. Miriuka^{1*}

¹LIAN-CONICET, FLENI - Ruta 9 km 52.5 - Belen de Escobar, Provincia de Buenos Aires, Argentina

*smiriuka@fleni.org.ar

ABSTRACT

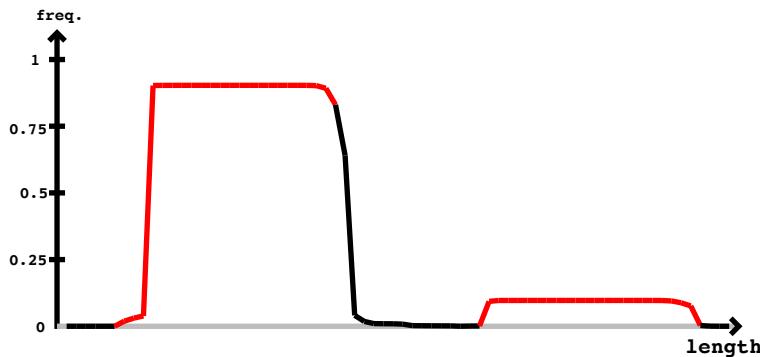
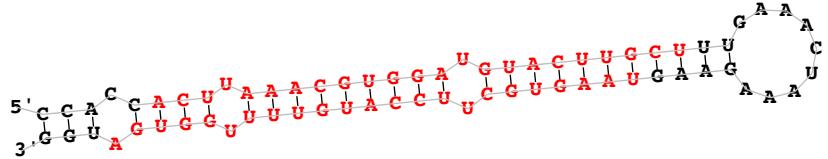
miRBase precursor : hsa-mir-302a

Total read count : 458107

hsa-miR-302a-5p read count 409544

hsa-miR-302a-3p read count 44324

remaining reads : 4238



hsa-miR-302a-5p

hsa-miR-302a-3p

5' - ccaccacuuuaacgugga... -3'	exp	reads	mm	sample
((...((((...((((((.....))))))))....))))....))				
....cacuuuaacgugga...uug		1	0	seq
....acuuuaacgugga...uac		1	1	seq
....acuuuaacgugga...uac		25	0	seq
....acuuuaacgugga...uacu		25	0	seq
....acuuuaacgugga...uacu		448	0	seq
....acuuuaacgugga...uau		1	1	seq
....acCuuaacgugga...acuu		1	1	seq
....acuuUaacgugga...acuu		1	1	seq
....Gcuuaacgugga...acuu		1	1	seq
....aAuuuaacgugga...acuu		1	1	seq
....aGuuaaacgugga...acuu		1	1	seq
....acuuuaacg...acuu		2	1	seq
....acuuuaacgugga...acuG		6	1	seq
....acuuuaacguggG...acuu		4	1	seq
....acuuuaaacA...acuu		1	1	seq
....acuuuaaacguggga...Cacuu		1	1	seq
....acuAaaacguggga...acuu		1	1	seq
....acuuuaaacguggga...acuuA		1	1	seq
....acuuuaaacguggga...acuC		6	1	seq
....acuuuaaacguggga...Gcuu		1	1	seq
....acuuuaaacgug...acuuug		1	1	seq
....acuuuaacguggG...acuuug		15	1	seq
....acuCaaacgugga...acuuug		6	1	seq
....acuuuaacg...acuuug		1	1	seq
....acuuuaagcg...acuuug		11	1	seq
....acuuuaUcgugga...acuuug		1	1	seq
....acAuaaacgugga...acuuug		2	1	seq
....acuuuaacgugga...Gcuacuuug		6	1	seq
....acuuuaaac...acuuug		4	1	seq
....Ucuuaacgugga...acuuug		2	1	seq
....acCuuaacgugga...acuuug		8	1	seq
....acuuuaacgugga...Gguacuuug		6	1	seq
....acuuuaacgugga...acuuuC		4	1	seq
....acuuuaacgugga...Auuug		1	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggauguacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....aUuuuaacguggauguacuug.....	1	1	seq
.....acuuuaacguggauguacAug.....	2	1	seq
.....acuuuaacguggauguacCug.....	9	1	seq
.....acuuUaacguggauguacuug.....	1	1	seq
.....acuuuaacguggauguacuuU.....	2	1	seq
.....acuuuaacgugAauguacuug.....	2	1	seq
.....acuuaaaUguggauguacuug.....	5	1	seq
.....acuuuaacguUgauguacuug.....	2	1	seq
.....acuuuaacguggauguacuuA.....	7	1	seq
.....aUuuuaacguggauguacuug.....	1	1	seq
.....acuuuaacguggauguacuGg.....	6	1	seq
.....acuuuaacguggUuguacuug.....	2	1	seq
.....acuuGaacguggauguacuug.....	10	1	seq
.....acuuuaacguggauAuacuug.....	2	1	seq
.....acuuuaacgCggauguacuug.....	8	1	seq
.....acuuuaacguggaAguacuug.....	1	1	seq
.....acuuuaacguggauguGcuuug.....	7	1	seq
.....acuuuaacguggauguaUuug.....	3	1	seq
.....aGuuaacguggauguacuug.....	3	1	seq
.....acuuuaacguggauguUuacuug.....	1	1	seq
.....acuuuaacguggauguacuug.....	3066	0	seq
.....acuuGaCguggauguacuug.....	6	1	seq
.....Gcuuuaacguggauguacuug.....	12	1	seq
.....acuuuaacguggauguacuCg.....	13	1	seq
.....acuuuaacguggaAgaugCacuug.....	8	1	seq
.....acuuuaacgAggauguacuug.....	1	1	seq
.....acuuuaacguggCuguacuug.....	1	1	seq
.....acuuuaacguggaGguacuugc.....	3	1	seq
.....acuuuaacgCggauguacuugc.....	12	1	seq
.....acuuuaacguggauguacuAgc.....	1	1	seq
.....acuAaaacguggauguacuugc.....	1	1	seq
.....acuuuaacguUgauguacuugc.....	6	1	seq
.....acuuuaacAuggauguacuugc.....	3	1	seq
.....Gcuuuaacguggauguacuugc.....	21	1	seq
.....acuuCaacguggauguacuugc.....	1	1	seq
.....acuuGaacguggauguacuugc.....	8	1	seq
.....acuuuaaGcguggauguacuugc.....	7	1	seq
.....acCuuaacguggauguacuugc.....	18	1	seq
.....acuuuaacgGggauguacuugc.....	1	1	seq
.....acuuuaaCcgguggauguacuugc.....	3	1	seq
.....acuuuaacgugAauguacuugc.....	4	1	seq
.....acuuuaacguggauguUcuugc.....	1	1	seq
.....acuuuaacguggauguacuGgc.....	3	1	seq
.....acuuuaGacguggauguacuugc.....	12	1	seq
.....acuuuaacgugUauguacuugc.....	1	1	seq
.....acuuuaacguggaAuaucuugc.....	2	1	seq
.....acuuuaacguggauguacuCgc.....	8	1	seq
.....aCGuuaacguggauguacuugc.....	1	1	seq
.....acuuuaacguggGuguacuugc.....	21	1	seq
.....aUuuuaacguggauguacuugc.....	2	1	seq
.....aGuuaacguggauguacuugc.....	4	1	seq
.....acuuuaacguggaAguacuugc.....	3	1	seq
.....acuuuaacguggauguacuuUc.....	1	1	seq
.....Ucuuuaacguggauguacuugc.....	4	1	seq
.....acuuuaacgAggauguacuugc.....	2	1	seq
.....acuuuaacguggauguacuugc.....	4673	0	seq
.....acuuuaacguggauguacAUGc.....	6	1	seq
.....acuuuaacgugAgauguacuugc.....	3	1	seq
.....acuuuaacguggauguacuuAc.....	4	1	seq
.....acuuuaacguggauguaUuugc.....	6	1	seq
.....acuuuaacguggaugCacuugc.....	4	1	seq
.....aUuuuaacguggauguacuugc.....	2	1	seq
.....acuuuaacguggUuguacuugc.....	2	1	seq
.....acuuuaacguggaCguacuugc.....	16	1	seq
.....acuuuaacguggauguGcuuugc.....	7	1	seq
.....acuuaaaUguggauguacuugc.....	2	1	seq
.....acuuuaacguggauguacuugU.....	7	1	seq
.....acuuuaacguggauguacCugc.....	11	1	seq
.....acAuuuaacguggauguacuugc.....	4	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaaacguggaugauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....Ccuuuaaacguggaugauacuugc.....	2	1	seq
.....acuuuaaacguggaugu <u>C</u> cuugc.....	2	1	seq
.....acuCaaacguggaugauacuugc.....	10	1	seq
.....acuuuaaac <u>C</u> uggaugauacuugc.....	1	1	seq
.....acuuuaaacguggaugauacuug <u>C</u>	1	1	seq
.....acuuuaaacguggaugauacuugc.....	22	0	seq
.....acuCaaacguggaugauacuugc.....	1	1	seq
.....acuuuaaacguggaugauac <u>C</u> ugc.....	1	1	seq
.....acuuuaaacguggaugauacuug <u>C</u>	1	1	seq
.....acuuuaaacguggaugauacuug <u>C</u> A.....	3	1	seq
.....ac <u>C</u> uuaaacguggaugauacuug <u>C</u>	1	1	seq
.....aUuuuaaacguggaugauacuug <u>C</u>	1	1	seq
.....acuuuaaacguggaugauacuug <u>C</u> uu.....	1	0	seq
.....cuuuaaacguggaugauacu.....	4	0	seq
.....cuuuaaacguggaugauacu.....	10	0	seq
.....cuuuaaacguggaugauacuug.....	200	0	seq
.....Uuuuaaacguggaugauacuug.....	1	1	seq
.....cuuuaaacg <u>G</u> ggug <u>a</u> guacuug.....	1	1	seq
.....cCuuaaacguggaugauacuug.....	1	1	seq
.....cuuuaaacgugg <u>G</u> guacuug.....	1	1	seq
.....cuuuaacgu <u>Ag</u> guacuug.....	1	1	seq
.....Guuaaacguggaugauacuug.....	1	1	seq
.....cuuuaacguggaugauac <u>Ag</u> c.....	1	1	seq
.....cuuuaacguggaugauacuug <u>U</u>	10	1	seq
.....cuuuaacguggaugu <u>C</u> cuugc.....	1	1	seq
.....cuuuaacguggaugauac <u>A</u> ugc.....	2	1	seq
.....Auuaaacguggaugauacuugc.....	2	1	seq
.....cuuuaacguggaugauacuugc.....	4187	0	seq
.....cuuuaacg <u>G</u> ggug <u>a</u> guacuugc.....	2	1	seq
.....cuuuaacguggauguac <u>C</u> ugc.....	9	1	seq
.....cuuuaacg <u>C</u> ggug <u>a</u> guacuugc.....	3	1	seq
.....cuuuaacgug <u>A</u> auguacuugc.....	2	1	seq
.....cu <u>A</u> aaacguggaugauacuugc.....	1	1	seq
.....Uuuuaaacguggaugauacuugc.....	7	1	seq
.....cuuuaacguggaugauac <u>G</u> uc.....	1	1	seq
.....cuuuaacguggaug <u>A</u> acuugc.....	1	1	seq
.....cuuuaacguggaugu <u>U</u> cuugc.....	1	1	seq
.....cuuuaacgu <u>Ag</u> guacuugc.....	5	1	seq
.....cuuuaacgugg <u>C</u> guacuugc.....	13	1	seq
.....cGuuaaacguggaugauacuugc.....	1	1	seq
.....cuCaaacguggaugauacuugc.....	4	1	seq
.....cuuuaacgugg <u>Ag</u> guacuugc.....	2	1	seq
.....cuuuaacguggauguac <u>u</u> Ac.....	6	1	seq
.....cuuuaacguggaugauacuug <u>A</u>	4	1	seq
.....cuuaaa <u>U</u> ggug <u>a</u> guacuugc.....	7	1	seq
.....cuuaa <u>G</u> cguggauguacuugc.....	8	1	seq
.....cuuuaacgu <u>U</u> gaug <u>a</u> guacuugc.....	2	1	seq
.....cCuuaaacguggaugauacuugc.....	14	1	seq
.....cuuua <u>C</u> cguggauguacuugc.....	1	1	seq
.....cuuuaacguggaugu <u>U</u> cuugc.....	16	1	seq
.....cuuuaacg <u>Ag</u> guacuugc.....	1	1	seq
.....cuua <u>G</u> acguggauguacuugc.....	10	1	seq
.....cuuuaacguggaug <u>u</u> acu <u>C</u> gc.....	12	1	seq
.....cuuuaacguggaug <u>u</u> uugc.....	2	1	seq
.....cuuuaacgugg <u>G</u> guacuugc.....	10	1	seq
.....cuuuaacguggaug <u>u</u> u <u>C</u>	1	1	seq
.....cuuuaacgugg <u>A</u> guacuugc.....	1	1	seq
.....cuuuaacguggaug <u>u</u> acu <u>G</u> c.....	1	1	seq
.....cuuuaacgugg <u>u</u> guacu <u>G</u> c.....	11	1	seq
.....cuuuaacgu <u>C</u> gaug <u>a</u> guacuugc.....	1	1	seq
.....Guuaaacguggaugauacuugc.....	6	1	seq
.....cuu <u>G</u> aacguggauguacuugc.....	5	1	seq
.....cuuuaac <u>A</u> uggauguacuugc.....	3	1	seq
.....cAuuaaacguggaugauacuugc.....	3	1	seq
.....cuuuaacguggaugau <u>A</u> uacuugc.....	6	1	seq
.....cuuuaacguggaug <u>A</u> acuugc.....	1	1	seq
.....cuuuaacguggaugu <u>U</u> cuugc.....	1	1	seq
.....cuuuaacguggauguacuug <u>U</u>	2	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaaacgguggauggauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugaugg

.....cuuaaacgCggauguacuugcu.....	3	1	seq
.....cuuaaacguggaaguacuugcu.....	1	1	seq
.....cuuaaacguggaaguacuugc.....	2	1	seq
.....cuuaaacguggaaguugGcuugcu.....	1	1	seq
.....cuuaaacguggaaguacuugcu.....	548	0	seq
.....cuuaaacguggaaguacuugcG.....	4	1	seq
.....cuuaaacguggaauugCacuugcu.....	2	1	seq
.....cuuaaacguggGuguacuugcu.....	1	1	seq
.....cuuaaacguggaaguacuugAu.....	1	1	seq
.....cuuaGacguggaaguacuugcu.....	1	1	seq
.....cuuaGcguggaaguacuugcu.....	1	1	seq
.....cuuaaacguAgauguacuugcu.....	2	1	seq
.....cuuaaacguggaaguacuAcu.....	1	1	seq
.....cCuuaaacguggaaguacuugcu.....	2	1	seq
.....cGuaaacguggaaguacuugcu.....	2	1	seq
.....cuuaaacguggaCguacuugcu.....	4	1	seq
.....cAuaaacguggaaguacuugcu.....	1	1	seq
.....cuCaaacguggaaguacuugcu.....	2	1	seq
.....cuuaaaUguggaaguacuugcu.....	1	1	seq
.....cuuaaacguggaaguacuugGu.....	1	1	seq
.....cuuaaacguggaaguacuCgcu.....	2	1	seq
.....cuuaaacguggaaguacuugcuA.....	8	1	seq
.....cuuaGacguggaaguacuugcuu.....	1	1	seq
.....cuuaaacguggaaguacuugcuG.....	1	1	seq
.....cGuaaacguggaaguacuugcuu.....	1	1	seq
.....cuuaaacguggaaguacuugcuu.....	35	0	seq
.....cuuaaacguggaaguacuugcuC.....	1	1	seq
.....cuuaaacguggaaguacuugcuuG.....	1	1	seq
.....cuuaaacguggaaguacuugcuuu.....	3	0	seq
.....cuuaaacguggaaguacuugcuuA.....	2	1	seq
.....cCuuaaacguggaaguacuugcuuu.....	1	1	seq
.....cuuaaacguggaaguacuugcuuC.....	1	1	seq
.....uuuaaacguggaaguacuu.....	3	0	seq
.....uuuaaacguggaaguacuug.....	43	0	seq
.....uuuaaacguggaaguacCugc.....	5	1	seq
.....uuuaaacguggaaguugCuu.....	3	1	seq
.....uuuaaacguggaaguacuuC.....	1	1	seq
.....Guaaacguggaaguacuugc.....	1	1	seq
.....uuuaCcguggaaguacuugc.....	1	1	seq
.....uuuaaacgAggauguacuugc.....	1	1	seq
.....uuuaaacgucGaguguacuugc.....	1	1	seq
.....uuuaaacguggaaguacuuAc.....	1	1	seq
.....uuuCacguggaaguacuugc.....	1	1	seq
.....uuuaaacguggaauugCacuugc.....	1	1	seq
.....uuuaaacguggaAguacuugc.....	1	1	seq
.....uuuaaacguggaaguacuugU.....	1	1	seq
.....uuuaaacgugAauuguacuugc.....	1	1	seq
.....uuuaaacgCggauguacuugc.....	2	1	seq
.....uuuaaacguggaaguacuugc.....	904	0	seq
.....uuuaaacAuggauguacuugc.....	2	1	seq
.....Cuuaaacguggaaguacuugc.....	10	1	seq
.....uuuaaacguggGuguacuugc.....	4	1	seq
.....uuGaacguggaaguacuugc.....	2	1	seq
.....uuuaaacgugAgauguacuugc.....	1	1	seq
.....uuuaaacguggaaguacuAgc.....	1	1	seq
.....uuuaaacguggaaguacuCgc.....	2	1	seq
.....uuuaaaUguggaaguacuugc.....	1	1	seq
.....uCaaacguggaaguacuugc.....	1	1	seq
.....uuuaaacguggaaguugAacuugc.....	1	1	seq
.....uuuaaacguggaCguacuugc.....	6	1	seq
.....uuuGacguggaaguacuugc.....	1	1	seq
.....uuuaaacguggGuguacuugc.....	7	1	seq
.....uuuaaacguggaaguacGugcu.....	1	1	seq
.....uuuaaacguggUuguacuugcu.....	2	1	seq
.....uuuaaacguggaaguuaUuugcu.....	3	1	seq
.....uuuaaacgugAauguacuugc.....	1	1	seq
.....uuuaaacguggaaguacuugc.....	19	1	seq
.....uuuaaacguggaaguacuuUcu.....	1	1	seq
.....uuuaCcguggaaguacuugcu.....	1	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggaugauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....uuaacguggaugauacuugcG.....	11	1	seq
.....uuaacguggaugAacuugcu.....	2	1	seq
.....Guaacguggaugauacuugcu.....	2	1	seq
.....uuaacguggaugauacuAgcu.....	1	1	seq
.....uCaaacguggaugauacuugcu.....	9	1	seq
.....uuaacguggaugCacuugcu.....	6	1	seq
.....uuaacguggaAguacuugcu.....	2	1	seq
.....Auaacguggaugauacuugcu.....	3	1	seq
.....uuaacguggaugauacuugAu.....	3	1	seq
.....uuaacguggaCguacuugcu.....	5	1	seq
.....uuUaacguggaugauacuugcu.....	2	1	seq
.....uuaacguggauguacuCcu.....	7	1	seq
.....uuaacguggauguacuugGu.....	2	1	seq
.....uuaacguggauCuacuugcu.....	1	1	seq
.....uAaacguggaugauacuugcu.....	2	1	seq
.....uuaacAuggaugauacuugcu.....	2	1	seq
.....uuaacgCggauguacuugcu.....	2	1	seq
.....uuaCacguggaugauacuugcu.....	3	1	seq
.....uuaacguggauguacuugCA.....	6	1	seq
.....uuaacguggauguacuulAcu.....	3	1	seq
.....uuaUacguggauguacuugcu.....	1	1	seq
.....uuaacguggauguacuugUu.....	4	1	seq
.....uuaaaUguggauguacuugcu.....	2	1	seq
.....uuaacguUgaugauacuugcu.....	1	1	seq
.....uuaacacguCgaugauacuugcu.....	3	1	seq
.....uuaacguggauguacuugcu.....	2389	0	seq
.....uuaacCuggauguacuugcu.....	1	1	seq
.....uuaacguAgaugauacuugcu.....	1	1	seq
.....uuaaAuggaugauacuugcu.....	3	1	seq
.....uuGaacguggauguacuugcu.....	3	1	seq
.....uuaaaGguggauguacuugcu.....	1	1	seq
.....uuaaaacguggauguacuugcu.....	5	1	seq
.....uuaacguggauguacuacuugcu.....	10	1	seq
.....uuaaAGcguggauguacuugcu.....	6	1	seq
.....uuaaacguggauAuacuugcu.....	4	1	seq
.....uuaaUcguggauguacuugcu.....	2	1	seq
.....uuaaaacguggauguacAugcu.....	2	1	seq
.....uuaGacguggauguacuugcu.....	7	1	seq
.....Cuaaaacguggauguacuugcu.....	28	1	seq
.....uuaaacguggauguacuugcuC.....	1	1	seq
.....Auaaaacguggauguacuugcuu.....	8	1	seq
.....uuaaacguggauguacuugGuu.....	1	1	seq
.....uuaaacguggauguacAuggcuu.....	1	1	seq
.....uuaGacguggauguacuugcuu.....	1	1	seq
.....uuaaacguggauguacuugcuu.....	63	0	seq
.....Guaacguggauguacuugcuu.....	1	1	seq
.....uuaaacguggauguacuugcuA.....	3	1	seq
.....uuaaacAuggauguacuugcuu.....	1	1	seq
.....uuaaacguggauguacuugUuu.....	1	1	seq
.....uuaaacguggauguacuugcAa.....	1	1	seq
.....uAaaaacguggauguacuugcuu.....	2	1	seq
.....Cuaaaacguggauguacuugcuu.....	57	1	seq
.....Cuaaaacguggauguacuugcuu.....	3	1	seq
.....uuaaacguggauguacuugcuu.....	6	0	seq
.....uuaaacguggauguacuugcuuA.....	10	1	seq
.....uuaaacguggauguacuugcuuug.....	2	0	seq
.....Cuaaaacguggauguacuugcuuug.....	1	1	seq
.....uuaaacguggauguacuugcuuuga.....	1	0	seq
.....uaaacgugUauguacuug.....	1	1	seq
.....uaaacguggauguacuCg.....	2	1	seq
.....Gaaacguggauguacuug.....	1	1	seq
.....uaaacguggauguacuug.....	2	1	seq
.....uaaacguggauguacuug.....	1004	0	seq
.....uaaacguggauguacuuc.....	2	1	seq
.....uaaacguggauguacuGg.....	3	1	seq
.....uaaacgugAauguacuug.....	1	1	seq
.....uaaacguggauguacuacCug.....	1	1	seq
.....uaaacguggUuguacuug.....	1	1	seq
.....uaaacguggaugCacuug.....	3	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggauguacuugcuuugaaacuaaaagaaguaagugcuuuccauguuuuggugugg

.....uaaacguggauAuacuug.....	1	1	seq
.....uaaacguggaCguacuug.....	3	1	seq
.....uaaacgAggauguacuug.....	2	1	seq
.....uGaacguggauguacuug.....	3	1	seq
.....uaaacguAgauacuug.....	2	1	seq
.....uaaacgcGgauacuug.....	2	1	seq
.....Caaacguggauacuug.....	1	1	seq
.....uaaGcguggauguacuug.....	1	1	seq
.....uaaacguggGuguacuug.....	1	1	seq
.....uUaacguggauguacuug.....	1	1	seq
.....uaaacguggauguacAug.....	1	1	seq
.....uaGacguggauguacuug.....	4	1	seq
.....uaaacguggauguacuugG.....	6	1	seq
.....uaaacgugAauguacuugc.....	8	1	seq
.....uaaacgcGgauguacuugc.....	6	1	seq
.....uaaacguggauguCcugc.....	2	1	seq
.....uaaacgAggauguacuugc.....	4	1	seq
.....uaaacgcuggauguacuugc.....	17129	0	seq
.....Aaaacguggauguacuugc.....	13	1	seq
.....uGaacguggauguacuugc.....	65	1	seq
.....uaaacguAgauacuugc.....	21	1	seq
.....uaaacguggauguacuAc.....	17	1	seq
.....uaUacguggauguacuugc.....	7	1	seq
.....uaCacguggauguacuugc.....	5	1	seq
.....uaaacgugUauguacuugc.....	3	1	seq
.....uaaacguggaugAacuugc.....	4	1	seq
.....uCaacguggauguacuugc.....	3	1	seq
.....uaaacgcuggauguacuGgc.....	8	1	seq
.....uaaacgcuggaugGaciuugc.....	8	1	seq
.....uUaacguggauguacuugc.....	8	1	seq
.....uaaacAuggauguacuugc.....	20	1	seq
.....uaaacguUgauguacuugc.....	1	1	seq
.....uaaacguggauguacCugc.....	43	1	seq
.....uaaacgcuggaugCaciuugc.....	37	1	seq
.....uaaacgcGgauguacuugc.....	42	1	seq
.....uaaacgcuggauguaUuugc.....	10	1	seq
.....uaaacUuggauguacuugc.....	1	1	seq
.....uaaacgcuggauguUcuugc.....	5	1	seq
.....uaaacgcuggauUuacuugc.....	1	1	seq
.....uaaacgcuggauguacuuUc.....	1	1	seq
.....uaaacgcuggaAgauacuugc.....	8	1	seq
.....uaaacgcuggauguacuugU.....	29	1	seq
.....uaaaUguggauguacuugc.....	15	1	seq
.....uaaacgcuggauguacAugc.....	8	1	seq
.....uaaacgcuggauguacuugA.....	3	1	seq
.....uaaacgcuggaGguacuugc.....	6	1	seq
.....uaaacgcuggauguacuCgc.....	54	1	seq
.....uaaacgcuggaCguacuugc.....	55	1	seq
.....uaaCcguggauguacuugc.....	9	1	seq
.....uaaacgcuggauAuacuugc.....	21	1	seq
.....Gaaacguggauguacuugc.....	19	1	seq
.....uaaUcguggauguacuugc.....	3	1	seq
.....uaaacgcuggauguGcuugc.....	44	1	seq
.....uaaacgcugCauguacuugc.....	1	1	seq
.....uaaaGgguggauguacuugc.....	1	1	seq
.....uaaacgcuggauguacuuCc.....	3	1	seq
.....uaGacguggauguacuugc.....	44	1	seq
.....Caaacguggauguacuugc.....	40	1	seq
.....uaaacgcggGgauacuugc.....	3	1	seq
.....uaaGcguggauguacuugc.....	50	1	seq
.....uaaacgcuggUuguacuugc.....	8	1	seq
.....uaaacgcuggauguacGugc.....	3	1	seq
.....uaaacgcuggauguacuAgc.....	4	1	seq
.....uaaacCuggauguacuugc.....	1	1	seq
.....uaaacgcuggGuguacuugc.....	58	1	seq
.....uaaacgcuggauguacuugcG.....	366	1	seq
.....uaaUcguggauguacuugc.....	14	1	seq
.....uaaacgcuggauguacuugcA.....	59	1	seq
.....uUaacguggauguacuugc.....	45	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggauguacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....uaaacgugUauguacuugcu.....	22	1	seq
.....uaaacguggauguaGuugcu.....	4	1	seq
.....uaaacguggauguacCugcu.....	194	1	seq
.....uaaacguggaugCacuugcu.....	132	1	seq
.....uaaacguggUuguacuugcu.....	42	1	seq
.....uaaacguggauguacuuAcu.....	43	1	seq
.....uaaacguggGuguacuugcu.....	288	1	seq
.....uaaaGguggauguacuugcu.....	4	1	seq
.....uaaacguggauguacGugcu.....	7	1	seq
.....uaaacAuggauguacuugcu.....	120	1	seq
.....uaaGcguggauguacuugcu.....	194	1	seq
.....uaUacguggauguacuugcu.....	24	1	seq
.....uaaacguggCuguacuugcu.....	12	1	seq
.....uaaacCuggauguacuugcu.....	3	1	seq
.....uaaacGggauguacuugcu.....	10	1	seq
.....uaaacguggauguacAugcu.....	36	1	seq
.....uaaacCggauguacuugcu.....	185	1	seq
.....uaaacAgggauguacuugcu.....	12	1	seq
.....uaaacguCgauguacuugcu.....	10	1	seq
.....uaaacguggauguacuugcu.....	273	1	seq
.....uaaacguggauguacuugUu.....	91	1	seq
.....uaCacguggauguacuugcu.....	15	1	seq
.....uaaacguggauguacuugcC.....	427	1	seq
.....uaaacguggauguacuugcu.....	78998	0	seq
.....uaaacguggauguCcugcu.....	11	1	seq
.....uaaacguggauguacuAgcu.....	38	1	seq
.....uaaaAggguggauguacuugcu.....	1	1	seq
.....uaaCcguggauguacuugcu.....	32	1	seq
.....uaaacguUgauguacuugcu.....	25	1	seq
.....uaaacguggauguUcuugcu.....	37	1	seq
.....uaaacguggaCguacuugcu.....	256	1	seq
.....uCaacguggauguacuugcu.....	13	1	seq
.....uaaacguggauguacuugAu.....	42	1	seq
.....uaaacguggauUuacuugcu.....	3	1	seq
.....uaaacguggaGguacuugcu.....	14	1	seq
.....Gaaacguggauguacuugcu.....	81	1	seq
.....uaaacguggauguacuCgu.....	230	1	seq
.....uaaacgugCauguacuugcu.....	4	1	seq
.....Aaaacguggauguacuugcu.....	63	1	seq
.....uaaacUuggauguacuugcu.....	8	1	seq
.....uGaacguggauguacuugcu.....	301	1	seq
.....uaaacguggauAuacuugcu.....	72	1	seq
.....uaaacguggauCaucuugcu.....	4	1	seq
.....uaaacguggaAguacuugcu.....	28	1	seq
.....uaaacguggauguacuucu.....	4	1	seq
.....uaaacguggaugAacuugcu.....	20	1	seq
.....uaaaUguggauguacuugcu.....	77	1	seq
.....uaaacguggauguacuugGu.....	8	1	seq
.....uaaacguggauguaUuugcu.....	63	1	seq
.....uaaacguggauguaAuugcu.....	4	1	seq
.....uaaacguAggauguacuugcu.....	79	1	seq
.....uaaacguggauguacuugcu.....	30	1	seq
.....uaaacgugAauguacuugcu.....	41	1	seq
.....Caaacguggauguacuugcu.....	173	1	seq
.....uaGacguggauguacuugcu.....	217	1	seq
.....uaaacguggauguacuuUcu.....	4	1	seq
.....uaaacguggaugGacuugcu.....	39	1	seq
.....uaaacguggauguacGugcuu.....	31	1	seq
.....uaaacgugAauguacuugcuu.....	169	1	seq
.....uaaacguggauguacuugcGu.....	242	1	seq
.....uCaacguggauguacuugcuu.....	44	1	seq
.....uaaacguggauguacuugcuA.....	203	1	seq
.....Aaaacguggauguacuugcuu.....	157	1	seq
.....uaaacguggaAguacuugcuu.....	83	1	seq
.....uaaacguggauAuacuugcuu.....	228	1	seq
.....uGaacguggauguacuugcuu.....	939	1	seq
.....uaaacguggauguacuugUuu.....	326	1	seq
.....uUaacguggauguacuugcuu.....	121	1	seq
.....uaaacgugUauguacuugcuu.....	68	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaacguggauguacuugcuuugaaacuaaaagaaguaaguguciuuccauguuuuggugauugg

.....aaaaAguggauguacuugcuu.....	7	1	seq
.....uaaacguggGGuacuugcuu.....	1021	1	seq
.....uaaacguggauguacuugcCu.....	624	1	seq
.....uaaacguggauguacuugcAu.....	150	1	seq
.....uaaacguggauCuauciugcuu.....	10	1	seq
.....uaaacguggauguCciugcuu.....	32	1	seq
.....uaaacguggauguGuugcuu.....	2	1	seq
.....uaaacguAgauguacuugcuu.....	227	1	seq
.....Caaacguggauguacuugcuu.....	591	1	seq
.....uaaacguggauguacuugAuu.....	29	1	seq
.....uaaacguggauguUuaciugcuu.....	19	1	seq
.....uaaacguggauguacuiccuu.....	15	1	seq
.....uaaacguggauguUuugcuu.....	189	1	seq
.....uaaacguggauguacuGgcuu.....	91	1	seq
.....uaaacguggauguacuiaCuu.....	186	1	seq
.....uaaacguggauguacuCgcuu.....	678	1	seq
.....uaGacguggauguacuugcuu.....	744	1	seq
.....uaaacGgguggauguacuugcuu.....	35	1	seq
.....uaaacguggauguacuicuu.....	19	1	seq
.....uaaacguggauguacCugcuu.....	684	1	seq
.....uaaacguggauguacuAgcuu.....	114	1	seq
.....uaaacguggauguUciugcuu.....	103	1	seq
.....uaaacguggauguacuicu.....	848	1	seq
.....uaaacguggaugCaciugcuu.....	465	1	seq
.....uaaaaGguggauguacuugcuu.....	8	1	seq
.....uaaacguggauguGciugcuu.....	804	1	seq
.....uaaacguggaGguacuugcuu.....	26	1	seq
.....Gaaacguggauguacuugcuu.....	230	1	seq
.....uaaacgCgguggauguacuugcuu.....	541	1	seq
.....uaaacguUgauguacuugcuu.....	69	1	seq
.....uaaacUugguggauguacuugcuu.....	17	1	seq
.....uaaGcguggauguacuugcuu.....	705	1	seq
.....uaaacguggCuguacuugcuu.....	28	1	seq
.....uaaUcguggauguacuugcuu.....	42	1	seq
.....uaaacguggaCguacuugcuu.....	854	1	seq
.....uaaacguggauguacuugcuG.....	783	1	seq
.....uaaacguggauguaAuugcuu.....	15	1	seq
.....uaaaUguggauguacuugcuu.....	245	1	seq
.....uaaacguggaugGaciugcuu.....	98	1	seq
.....uaaacgugCauguacuugcuu.....	19	1	seq
.....uaaacAugguggauguacuugcuu.....	376	1	seq
.....uaaacguggauguacuugcuu.....	259397	0	seq
.....uaaacguggauguacAuggcuu.....	113	1	seq
.....uaaacguCgauguacuugcuu.....	27	1	seq
.....uaCacguggauguacuugcuu.....	40	1	seq
.....uaaacCugguggauguacuugcuu.....	12	1	seq
.....uaaCcguggauguacuugcuu.....	141	1	seq
.....uaUacguggauguacuugcuu.....	79	1	seq
.....uaaacguggauguacuugGuu.....	14	1	seq
.....uaaacguggUuguacuugcuu.....	109	1	seq
.....uaaacgAggauguacuugcuu.....	51	1	seq
.....uaaacguggaugAaciugcuu.....	62	1	seq
.....uaaacgugAauguacuugcuu.....	12	1	seq
.....uaaacguggauguacuugcuG.....	53	1	seq
.....uaaacguggauguacuugCuu.....	28	1	seq
.....uaaacguAgauguacuugcuu.....	9	1	seq
.....uaGacguggauguacuugcuu.....	22	1	seq
.....uaaacguggauguaUuuugcuu.....	6	1	seq
.....uaaacguggauguacGugcuu.....	1	1	seq
.....uaaacguggauguacuCgcuu.....	31	1	seq
.....uaaacguggauguacuugcGuu.....	4	1	seq
.....uaaacguggaugGaciugcuu.....	5	1	seq
.....uaaacguggUuguacuugcuu.....	2	1	seq
.....uaaacguggauguCciugcuu.....	2	1	seq
.....uaaacguggaCguacuugcuu.....	30	1	seq
.....uaaacgugUauguacuugcuu.....	3	1	seq
.....uaaacguggauguacuGgcuu.....	1	1	seq
.....uaaacgGgguggauguacuugcuu.....	1	1	seq
.....uaaCcguggauguacuugcuu.....	1	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggauguaucuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....uaaacguggaugua <u>Auuugcuuu</u>	1	1	seq
.....uaaacguggaugua <u>cuuugcuuA</u>	204	1	seq
.....uGaacguggaugua <u>cuuugcuuu</u>	34	1	seq
.....Caaacguggaugua <u>cuuugcuuu</u>	21	1	seq
.....uaaacgugg <u>Cguacuucuuugcuuu</u>	2	1	seq
.....uaaacguggaugua <u>cuuugAuuu</u>	1	1	seq
.....uaUacguggaugua <u>cuuucuuugcuuu</u>	4	1	seq
.....uaaacguggaugua <u>cuuucuuugcuuu</u>	5	1	seq
.....uaaacguggaugua <u>cuuucuuugcuuu</u>	24	1	seq
.....uCaacguggaugua <u>cuuucuuugcuuu</u>	3	1	seq
.....uaCacguggaugua <u>cuuucuuugcuuu</u>	2	1	seq
.....uaaacguggaugua <u>cuuucuuugcAuu</u>	3	1	seq
.....uaaacguggaugua <u>cuuucuuugUuuu</u>	11	1	seq
.....uaaacgugg <u>Aguacuucuuugcuuu</u>	4	1	seq
.....aaaaUgguggaugua <u>cuuucuuugcuuu</u>	8	1	seq
.....uaaacguggaug <u>Cacuuugcuuu</u>	21	1	seq
.....uaaacguggaugua <u>cuuucuuucuuu</u>	8	1	seq
.....uaaGcguggaugua <u>cuuucuuugcuuu</u>	20	1	seq
.....uaaacguggaugua <u>cuuucuuugcGu</u>	11	1	seq
.....uaaacguggaugua <u>cuuucuuugcuuu</u>	8	1	seq
.....Gaaacguggaugua <u>cuuucuuugcuuu</u>	11	1	seq
.....uaaacgu <u>Cgaugua<u>cuuucuuugcuuu</u></u>	1	1	seq
.....uaaac <u>Ugguggaugua<u>cuuucuuugcuuu</u></u>	2	1	seq
.....uaaacguggaugua <u>cuuucuuugcAu</u>	5	1	seq
.....uaaacguggaugua <u>cuuucuuucuuu</u>	1	1	seq
.....uaaacguggaugu <u>Ucuuugcuuu</u>	2	1	seq
.....uaaacguggaugua <u>cuuucuuCcuuu</u>	1	1	seq
.....uaaacgugg <u>Guguacuucuuugcuuu</u>	30	1	seq
.....uaaac <u>Augguggaugua<u>cuuucuuugcuuu</u></u>	18	1	seq
.....uUaacguggaugua <u>cuuucuuugcuuu</u>	4	1	seq
.....uaaacguggaugua <u>cuuucuuugcCu</u>	9	1	seq
.....uaaacguggaugua <u>cuuucuuugcuuu</u>	9532	0	seq
.....uaaacguggaugua <u>cuuucuuAgcuuu</u>	4	1	seq
.....uaaacgu <u>Ugaugua<u>cuuucuuugcuuu</u></u>	5	1	seq
.....uaaacguggaugu <u>Gcuuugcuuu</u>	34	1	seq
.....Aaaacguggaugua <u>cuuucuuugcuuu</u>	5	1	seq
.....uaaacgugg <u>Aacuuugcuuu</u>	3	1	seq
.....uaaacguggaugua <u>cuuucuuugcuiC</u>	98	1	seq
.....uaaacg <u>Cgguggaugua<u>cuuucuuugcuuu</u></u>	23	1	seq
.....uaaacg <u>Aggguggaugua<u>cuuucuuugcuuu</u></u>	7	1	seq
.....uaaacguggaugua <u>cuuucuuugcUug</u>	3	1	seq
.....uaaacguggaugua <u>cuuucuuugcCuug</u>	13	1	seq
.....uaaacguggaugua <u>cuuucuuugCugcuuu</u>	8	1	seq
.....uGaacguggaugua <u>cuuucuuugcuuuug</u>	14	1	seq
.....uaaacguggaugua <u>cuuucuuucuuuug</u>	4	1	seq
.....uaaacguggaugau <u>Auacuucuuugcuuuug</u>	2	1	seq
.....uaaacg <u>Cgguggaugua<u>cuuucuuugcuuuug</u></u>	6	1	seq
.....Aaaacguggaugua <u>cuuucuuugcuuuug</u>	2	1	seq
.....uaaacguggaug <u>Cacuuugcuuuug</u>	2	1	seq
.....uaaacg <u>Aggguggaugua<u>cuuucuuugcuuuug</u></u>	3	1	seq
.....uaaacguggaugua <u>cuuucuuugcGuug</u>	3	1	seq
.....uaaacgu <u>Ugaugua<u>cuuucuuugcuuuug</u></u>	2	1	seq
.....uaaacguggaugua <u>cuuucuuugcuiC</u>	29	1	seq
.....uaa <u>Gcgguggaugua<u>cuuucuuugcuuuug</u></u>	9	1	seq
.....uaUacguggaugua <u>cuuucuuugcuuuug</u>	1	1	seq
.....uaaacguggaugu <u>Gcuuugcuuuug</u>	8	1	seq
.....uaaacguggaug <u>Augcuuugcuuuug</u>	2	1	seq
.....uaaacgu <u>Aggguggaugua<u>cuuucuuugcuuuug</u></u>	4	1	seq
.....uaaUcguggaugua <u>cuuucuuugcuuuug</u>	2	1	seq
.....uaaacguggaug <u>AcGucuuuug</u>	2	1	seq
.....uaaacguggaugua <u>cuuucuuugcuiAg</u>	7	1	seq
.....uaaa <u>Aggguggaugua<u>cuuucuuugcuuuug</u></u>	1	1	seq
.....uaaacguggaugua <u>cuuucuuugcuiU</u>	18	1	seq
.....uaaacgugg <u>Guguacuucuuugcuuuug</u>	14	1	seq
.....uaaacgug <u>Aaugua<u>cuuucuuugcuuuug</u></u>	3	1	seq
.....uaaacguggaugua <u>cuuucuuugAuuuug</u>	1	1	seq
.....uaaacguggaugua <u>cuuucuuugcuiCg</u>	13	1	seq
.....uaaacguggaugu <u>Ucuuugcuuuug</u>	3	1	seq
.....uaGacguggaugua <u>cuuucuuugcuuuug</u>	7	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaacgugga_{guacuug}cuu_{uugaa}acua_{aagg}uaagugcuuccaguuuuggugg

.....uaaac <u>cgugga</u> guacu <u>Cgc</u> uu <u>ug</u>	8	1	seq
.....uaaac <u>cgugga</u> guacu <u>uug</u> U <u>uuug</u>	1	1	seq
.....uaaac <u>cgugga</u> guacu <u>uug</u> G <u>g</u>	5	1	seq
.....uaaac <u>cgugga</u> guacu <u>uuc</u> U <u>uuug</u>	1	1	seq
.....uaaac <u>cgugga</u> guacu <u>uuc</u> U <u>uug</u>	5	1	seq
.....uaaac <u>cgug</u> U <u>au</u> guacu <u>uug</u>	2	1	seq
.....uaaac <u>cgugga</u> u <u>g</u> G <u>acu</u> u <u>uug</u>	1	1	seq
.....u <u>Ua</u> ac <u>cgugga</u> u <u>g</u> uacu <u>uuc</u> u <u>uug</u>	2	1	seq
.....uaaac <u>cgugga</u> u <u>g</u> uacu <u>uuc</u> u <u>A</u>	188	1	seq
.....uaaac <u>cgugga</u> Ag <u>uacu</u> u <u>uug</u>	1	1	seq
.....uaaac <u>cgugga</u> u <u>g</u> uacu <u>uuc</u> u <u>gug</u>	1	1	seq
.....Caa <u>acgugga</u> guacu <u>uuc</u> u <u>uug</u>	7	1	seq
.....uaaac <u>cgugga</u> guacu <u>uuc</u> u <u>Agc</u> u <u>uug</u>	2	1	seq
.....uaaac <u>cgugga</u> guacu <u>uuc</u> u <u>uug</u> A <u>ug</u>	2	1	seq
.....uaaac <u>cgugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>auug</u>	4	1	seq
.....uaaac <u>cgugga</u> Ca <u>guacu</u> u <u>uug</u>	8	1	seq
.....uaaac <u>cgugga</u> u <u>g</u> uacu <u>uuc</u> u <u>uug</u>	3256	0	seq
.....Gaa <u>acgugga</u> guacu <u>uuc</u> u <u>uug</u>	6	1	seq
.....u <u>ua</u> C <u>cgugga</u> guacu <u>uuc</u> u <u>uug</u>	5	1	seq
.....u <u>aaa</u> U <u>gugga</u> guacu <u>uuc</u> u <u>uug</u>	5	1	seq
.....u <u>aaac</u> A <u>ugga</u> guacu <u>uuc</u> u <u>uug</u>	4	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> u <u>A</u>	2	1	seq
.....u <u>aaac</u> c <u>gg</u> guacu <u>uuc</u> u <u>uug</u>	2	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G.....	3	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> AA <u>a</u>	24	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> U.....	5	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> U <u>ga</u>	201	0	seq
.....u <u>aa</u> G <u>cgugga</u> guacu <u>uuc</u> u <u>uug</u> U <u>ga</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> U <u>g</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> U <u>ga</u>	2	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u>	4	1	seq
.....u <u>aaac</u> c <u>gug</u> Ca <u>guacu</u> u <u>uug</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u>	1	1	seq
.....u <u>Gac</u> gugga <u>guacu</u> u <u>uug</u>	3	1	seq
.....Caa <u>acgugga</u> guacu <u>uuc</u> u <u>uug</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> AA <u>a</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G.....	4	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> C.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> Ca.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> GA.....	85	0	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u>	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u>	532	0	seq
.....u <u>aa</u> G <u>cgugga</u> guacu <u>uuc</u> u <u>uug</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugg</u> G <u>guacu</u> u <u>uug</u>	2	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>uug</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>uug</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>uug</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>uug</u> AAA.....	5	1	seq
.....u <u>Gaa</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> AAA.....	5	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	4	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	2	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	2	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	4	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	4	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	7	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	5	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	8	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>Gac</u> gugga <u>guacu</u> u <u>uug</u>	8	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gugga</u> guacu <u>uuc</u> u <u>uug</u> G <u>u</u> AAA.....	1	1	seq
.....u <u>aaac</u> c <u>gug</u> Ca <u>guacu</u> u <u>uug</u>	1	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaacguggauguacuugcuuugaaacuaagaaguaagugcuiuccauguuuuggugaugg

.....uaaacgug <u>A</u> auguacuugcuuugaaac.....	1	1	seq
.....uaaacgugg <u>G</u> guacuugcuuugaaac.....	10	1	seq
.....uaaacgugg <u>U</u> guacuugcuuugaaac.....	4	1	seq
.....ua <u>U</u> acguggauguacuugcuuugaaac.....	1	1	seq
.....uaaacgug <u>U</u> auguacuugcuuugaaac.....	3	1	seq
.....uaaacguggauguacuugcuu <u>AAA</u> ac.....	6	1	seq
.....uaaacguggauguacuug <u>C</u> ugaac.....	5	1	seq
.....uaaacguggauguacuug <u>U</u> uuugaaac.....	3	1	seq
.....uaaacguggauguacuug <u>G</u> ac.....	8	1	seq
.....uaaacguggauguacuug <u>U</u> cua.....	1	1	seq
.....Aaaacguggauguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuuga <u>C</u> ac.....	1	1	seq
.....uaaacguggaugu <u>U</u> uug <u>U</u> uugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>U</u> uugaa <u>A</u>	1	1	seq
.....uaaacguggaug <u>A</u> acuug <u>U</u> uugaaac.....	1	1	seq
.....uaaacgGgg <u>U</u> ggug <u>U</u> acuug <u>U</u> uugaaac.....	2	1	seq
.....uaaacguggauguacuug <u>U</u> cua.....	1	1	seq
.....uaaa <u>U</u> guggauguacuug <u>U</u> uugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>U</u> uugaaac.....	2380	0	seq
.....uaaacguggauguacuug <u>C</u> uuug <u>G</u> ac.....	9	1	seq
.....uaaacguggaugu <u>A</u> uug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaaac.....	12	1	seq
.....Caaacguggauguacuug <u>C</u> uuugaaac.....	4	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>A</u>	1	1	seq
.....uaaacguggaug <u>G</u> acuug <u>C</u> uuugaaac.....	3	1	seq
.....uaaacguggaug <u>G</u> acu <u>C</u> uuugaaac.....	3	1	seq
.....uaaacgu <u>C</u> gaug <u>U</u> acuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacgAg <u>U</u> ggug <u>U</u> acuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacgu <u>U</u> ggug <u>U</u> acuug <u>C</u> uuugaaac.....	2	1	seq
.....uaaacguggauguacuug <u>G</u> ugaac.....	3	1	seq
.....uaa <u>G</u> cuggauguacuug <u>C</u> uuugaaac.....	5	1	seq
.....uaaacguggaug <u>G</u> acuug <u>C</u> uuugaaac.....	8	1	seq
.....uaaacguggaugu <u>G</u> uug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> c.....	15	1	seq
.....uaaacguggauguacuug <u>C</u> gaaac.....	5	1	seq
.....uaaac <u>A</u> uggauguacuug <u>C</u> uuugaaac.....	3	1	seq
.....u <u>G</u> aacguggauguacuug <u>C</u> uuugaaac.....	6	1	seq
.....uaaacguggauguacuug <u>G</u> uugaac.....	2	1	seq
.....uaaacgugg <u>G</u> uguacuug <u>C</u> uuugaaac.....	8	1	seq
.....uaaacguggauguac <u>A</u> ug <u>C</u> uuugaaac.....	1	1	seq
.....u <u>G</u> aacguggauguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguac <u>A</u> ug <u>C</u> uuugaaac.....	2	1	seq
.....uaaacgugg <u>G</u> uguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> uugaac.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> gaaac.....	1	1	seq
.....uaaac <u>A</u> uggauguacuug <u>C</u> uuugaaac.....	1	1	seq
.....u <u>G</u> aacguggauguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguac <u>A</u> ug <u>C</u> uuugaaac.....	2	1	seq
.....uaaacgugg <u>G</u> uguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> uugaac.....	2	1	seq
.....uaaacguggauguacuug <u>C</u> gaaac.....	166	0	seq
.....uaaacguggauguacuug <u>C</u> ugaac.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> acu.....	2	1	seq
.....uaaacguggaugu <u>U</u> uug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> uugaac.....	5	1	seq
.....uaaac <u>C</u> gg <u>U</u> ggug <u>U</u> acuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>G</u> cu.....	1	1	seq
.....ua <u>C</u> cguggauguacuug <u>C</u> uuugaaac.....	1	1	seq
.....uaaac <u>U</u> ggug <u>U</u> acuug <u>C</u> uuugaaacua.....	1	1	seq
.....uaaacguggauguacuug <u>G</u> acu.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuug <u>G</u> acu.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuug <u>C</u> gaaacua.....	1	1	seq
.....uaaacgugg <u>G</u> uguacuug <u>C</u> uuugaaacua.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>A</u> cu.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>C</u> u.....	124	0	seq
.....ua <u>G</u> acguggauguacuug <u>C</u> uuugaaacua.....	2	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>U</u>	3	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaa <u>A</u> cu.....	1	1	seq
.....uaaacguggaug <u>A</u> uacuug <u>C</u> uuugaaacua.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaaacua.....	1	1	seq
.....ua <u>G</u> cguggauguacuug <u>C</u> uuugaaacua.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaaacua.....	1	1	seq
.....uaaacguggauguacuug <u>C</u> uuugaaacua.....	90	0	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaacguggauguacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugau

.....uaaacguggaAguacuugcuuugaacuaaa.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaAG.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaGa.....	1	1	seq
.....uaaacguggauguacuacuCgcuuugaacuaaa.....	1	1	seq
.....uaaacguggauguacuacuUGcaa.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaaa.....	1	1	seq
.....uaaacguggauguacuugcuuugGaacuaaa.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaU.....	1	1	seq
.....uaaacgugUauuguacuugcuuugaacuaaa.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaaa.....	51	0	seq
.....uaaacguggauguacuugcuuugaacuaGg.....	3	1	seq
.....Gaaacguggauguacuugcuuugaacuaag.....	2	1	seq
.....uaaacguggaugGacuugcuuugaacuaag.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaag.....	555	0	seq
.....uaaacguggauguacAugcuuugaacuaag.....	1	1	seq
.....uaaacguggauguauUuugcuuugaacuaag.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaAC.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuaAG.....	1	1	seq
.....uaaacguggauguacuugcuuugaAcuaag.....	2	1	seq
.....uaaacguggauguacuugcuuugGaacuaaa.....	2	1	seq
.....uaaacguggauguacuugcuuugUaacaag.....	1	1	seq
.....uaaacguggauguacuugcuuugaacuGaag.....	2	1	seq
.....Caaacguggauguacuugcuuugaacuaag.....	4	1	seq
.....uaaacguggauguacuugcuuugaacuaGag.....	3	1	seq
.....uaGacguggauguacuugcuuugaacuaag.....	4	1	seq
.....uaaacguggauguacuugcuuugaUcaaaag.....	1	1	seq
.....uaaacguggauguUcuugcuuugaacuaag.....	1	1	seq
.....uaaGcguggauguacuugcuuugaacuaag.....	1	1	seq
.....uaaacguggauguacuugcuuugaAcuaag.....	1	1	seq
.....uaaacguggaCguacuugcuuugaacuaag.....	3	1	seq
.....uaaacguggauguacuCgcuuugaacuaag.....	1	1	seq
.....uaaacgugUauuguacuugcuuugaacuaag.....	1	1	seq
.....uaaacguggauguacuugcuuugaGacuaaa.....	3	1	seq
.....uaaacguggauguacuugcuGugaacuaag.....	1	1	seq
.....uaaacguggGuguacuugcuuugaacuaag.....	4	1	seq
.....uGaacguggauguacuugcuuugaacuaag.....	3	1	seq
.....uaaacgCgguguaacuugcuuugaacuaag.....	2	1	seq
.....uaaacguggauguacuugcuuugaacuaaga.....	5	0	seq
.....uaaacguggauguacuugcuuugaacuaagU.....	1	1	seq
.....Uaacguggauguacuugc.....	2	1	seq
.....aaacguggauguacuugc.....	10	0	seq
.....aaacguggauguacuugc.....	38	0	seq
.....aaGcguggauguacuugc.....	1	1	seq
.....Gaacguggauguacuugc.....	1	1	seq
.....Uaacguggauguacuugc.....	32	1	seq
.....aaacguggGuguacuugc.....	1	1	seq
.....Uaacguggauguacuugcui.....	69	1	seq
.....aGacguggauguacuugcui.....	1	1	seq
.....aaacguggauguacuugcui.....	66	0	seq
.....Uaacguggauguacuugcui.....	5	1	seq
.....aaacguggauguacuugcui.....	2	0	seq
.....Uaacguggauguacuugcui.....	1	1	seq
.....aaacguggauguacuugcui.....	2	0	seq
.....Uaacguggauguacuugcui.....	1	1	seq
.....aaacguggauguacuugcui.....	1	1	seq
.....aaacguggauguacuugcui.....	6	0	seq
.....aaacguggauguacuugcui.....	17	0	seq
.....aaacguggauguacuugcui.....	2	0	seq
.....aaacguggauguacuugcui.....	2	0	seq
.....Ccguggauguacuugcui.....	2	1	seq
.....acguggauguGcuuugcui.....	1	1	seq
.....acguggauguacuugCu.....	1	1	seq
.....acguggauguacuAgu.....	1	1	seq
.....acgGgguggauguacuugcui.....	1	1	seq
.....acguggauguacuugcui.....	32	0	seq
.....cguggauguacuugcui.....	6	0	seq
.....cguggauguacuugcui.....	2	0	seq
.....cguggauguacuugcui.....	1	0	seq
.....cguggauguacuugcuiCgaaac.....	1	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaaacguggaugauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....cguggaugauacuugcuuugaaac.....	3	0	seq
.....guggaugauacuugcuuug.....	5	0	seq
.....guggaugauacuugcuuuga.....	1	0	seq
.....guggaugauacuugcuuugaaa.....	3	0	seq
.....guggaugauacuugcuuugGaa.....	1	1	seq
.....guggaugauacuugcuuugaaac.....	3	0	seq
.....guggaugauacuugcuuugaaacua.....	1	0	seq
.....guggaugauacuugcuuugaaacuaag.....	2	0	seq
.....uggauguacuugcuuugaaac.....	2	0	seq
.....uggauguacuugcCuugaac.....	1	1	seq
.....uggauguacuugcuuugaaacuaaga.....	1	0	seq
.....ggauguacuugcuuugaaa.....	1	0	seq
.....gauguacuugcuuugaaa.....	1	0	seq
.....gauguacuugcuuugaacuaaaga.....	1	0	seq
.....guacuugcuuugaacuaa....	1	0	seq
.....ugcuuugaacuaaaga.....	1	0	seq
.....aguaagugcuiuccauguu.....	1	0	seq
.....aguaagugcuiuccauguuu.....	9	0	seq
.....aguaagugcuiuccauguuG.....	0	1	seq
.....aguagugcuiuccauguu.....	0	1	seq
.....aguaagugcuiuccauguuuu.....	15	0	seq
.....Uguaagugcuiuccauguuuu.....	0	1	seq
.....aAuaagugcuiuccauguuuu.....	0	1	seq
.....aguaagAgcuiuccauguuuug.....	1	1	seq
.....aUuaagugcuiuccauguuuug.....	1	1	seq
.....aguaagugcuiuccauguuug.....	2	1	seq
.....aguaagugcuiuccGauguuuug.....	1	1	seq
.....Gguaagugcuiuccauguuuug.....	2	1	seq
.....aguaagugcCuccauguuuug.....	1	1	seq
.....aguaagugcuiuccauguuuug.....	2	1	seq
.....aguaagugcuiuccauguuuug.....	1	1	seq
.....aguaagugUuuccauguuuug.....	1	1	seq
.....aguaGgugcuiuccauguuuug.....	1	1	seq
.....aguaagugcLuccauguuuug.....	1	1	seq
.....Uguaagugcuiuccauguuuug.....	2	1	seq
.....aguaagugcuiuccGuguuug.....	1	1	seq
.....aguaagugcuiuccauguuuug.....	297	0	seq
.....aguaagugcuiuccauguuuugA.....	1	1	seq
.....aguaagCgcuiuccauguuuugg.....	1	1	seq
.....aguaagugcuiuccauguuuugg.....	32	0	seq
.....aguaagugcuiuccauguuuuggA.....	2	1	seq
.....aAuaagugcuiuccauguuuuggu.....	1	1	seq
.....aAuaagugcuiuccauguuuuggug.....	8	1	seq
.....aAuaagugcuiuccauguuuugguga....	1	1	seq
.....guaagugcuiuccauguuC.....	0	1	seq
.....Cuaagugcuiuccauguu.....	0	1	seq
.....guaagugcuiuccauguuuug.....	3	0	seq
.....guaagugcuiuccauguuuugg.....	14	0	seq
.....Auaagugcuiuccauguuuugg.....	1	1	seq
.....guaagugcCuccauguuuugg.....	1	1	seq
.....Cuaagugcuiuccauguuuuggu.....	6	1	seq
.....Auaagugcuiuccauguuuuggu.....	2	1	seq
.....Uuaagugcuiuccauguuuuggug.....	2	1	seq
.....Cuaagugcuiuccauguuuuggug.....	20	1	seq
.....Auaagugcuiuccauguuuuggug.....	2	1	seq
.....Cuaagugcuiuccauguuuugguga....	2	1	seq
.....uaagugcuiuccauAuuuu.....	0	1	seq
.....uaagugcuiuccauguuu.....	24	0	seq
.....uaagugcuiuccauguuuCg.....	2	1	seq
.....uaagugcuiuccauguuuBg.....	2	1	seq
.....uaagugcCuccauguuuugg.....	2	1	seq
.....uaagugcuiuccaCguumuug.....	2	1	seq
.....uaagugcuiUcauguuuugg.....	1	1	seq
.....uaagugcuiuccauguuCug.....	2	1	seq
.....uaagugcuiuccGuguuugg.....	1	1	seq
.....uaagugcuiuccaGguuugg.....	1	1	seq
.....uaagugcuiuccauguuuAg.....	267	1	seq
.....uaagugcuiuccauguuuugg.....	186	0	seq
.....uaagugcCcuauguuuugg.....	1	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaaacguggaugauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugauugg

.....uaagugcuiuccauguuuuU.....	0	1	seq
.....uaagugcuiuccauguAuug.....	1	1	seq
.....uGagugcuiuccauguuuuug.....	1	1	seq
.....uaagugcuiuccauguuuuugg.....	3	1	seq
.....uaagugcuiuccCuguuuuugg.....	1	1	seq
.....uaagugcCuccauguuuuugg.....	7	1	seq
.....Caagugcuiuccauguuuuugg.....	4	1	seq
.....uaagugAuuccauguuuuugg.....	1	1	seq
.....uaagugcuiuccauguuuuAgg.....	2	1	seq
.....uaagugcuiucccauguuuuuggA.....	2	1	seq
.....uaagugcuiucccauguuuuugg.....	2851	0	seq
.....uaagugcuiuccauAuuuuugg.....	2	1	seq
.....uaagugcuiuccaugGuuugg.....	4	1	seq
.....uaaAugcuiuccauguuuuugg.....	2	1	seq
.....uaGgugcuiuccauguuuuugg.....	11	1	seq
.....uaUgugcuiuccauguuuuugg.....	1	1	seq
.....uaagAgcuiuccauguuuuugg.....	2	1	seq
.....uaaguAcuuccauguuuuugg.....	4	1	seq
.....uaagugcuiuccGuguuuuugg.....	5	1	seq
.....uaagugcuiucccauguuGugg.....	1	1	seq
.....uaagugcuiucccaugCuuugg.....	4	1	seq
.....uaagugcCccauguuuuugg.....	13	1	seq
.....uaagugcuiucccauguuuuCg.....	7	1	seq
.....uaagugUuuccauguuuuugg.....	5	1	seq
.....uaagugcuiuccauguuuuuggU.....	3	1	seq
.....uaagugcuiAccauguuuuugg.....	3	1	seq
.....uaagugcAuccauguuuuugg.....	1	1	seq
.....uaagugcuiucccauguuuuugg.....	81	1	seq
.....uaagugcuiucccaGguuuuugg.....	6	1	seq
.....uaagugcuiuUcauguuuuugg.....	5	1	seq
.....uaagugcuiucccauguuCugg.....	6	1	seq
.....Gaagugcuiucccauguuuuugg.....	3	1	seq
.....uaagugcuiucccaGguuuuugg.....	2	1	seq
.....uaagugcuiucccauguuuGgg.....	6	1	seq
.....uaagugcuiucccauguuuCgg.....	15	1	seq
.....uaagugcuiucccauguCugg.....	8	1	seq
.....uaagugcGuccauguuuuugg.....	1	1	seq
.....uaagCgcuiuccauguuuuugg.....	4	1	seq
.....uaagugcuiucccauguuuugC.....	6	1	seq
.....uaagugcuiucccauguAuugg.....	3	1	seq
.....uaagugcuiucAauguuuuugg.....	3	1	seq
.....uGagugcuiuccauguuuuugg.....	14	1	seq
.....Gaagugcuiuccauguuuuuggu.....	1	1	seq
.....uaagugcuiuccGguuuuuggu.....	2	1	seq
.....uaagugcuiucccauguuuuuggu.....	11	1	seq
.....uaagAgcuiuccauguuuuuggu.....	1	1	seq
.....uaagCgcuiuccauguuuuuggu.....	11	1	seq
.....uaagugcuiucUauguuuuuggu.....	6	1	seq
.....uaagugcAuccauguuuuuggu.....	1	1	seq
.....uaagugcuiucccauguuuuuggG.....	103	1	seq
.....uaagugcuiuAcauguuuuuggu.....	1	1	seq
.....uaagugcuiAccauguuuuuggu.....	7	1	seq
.....Aaagugcuiucccauguuuuuggu.....	5	1	seq
.....uaagugcGucccauguuuuuggu.....	1	1	seq
.....uaUgugcuiucccauguuuuuggu.....	4	1	seq
.....uaagugcuiucccauguuuUgu.....	1	1	seq
.....uaagugcuiucccauguuCuggu.....	11	1	seq
.....uaagugcuiucccaugGuuuuggu.....	4	1	seq
.....uaagugUuucccauguuuuuggu.....	3	1	seq
.....uaagugcuiucccauguuuAggu.....	3	1	seq
.....uaagugcuiucccauguuuuuggu.....	18	1	seq
.....uaagugcuiucccauguGuuggu.....	3	1	seq
.....uaagugcuiucccauguuuuuggCu.....	1	1	seq
.....uaaguAcuuccauguuuuuggu.....	1	1	seq
.....uaagugcGccauguuuuuggu.....	4	1	seq
.....uaagugcuiucccauguuuuuggC.....	173	1	seq
.....uaagugcuiucccauguuuuuggu.....	8	1	seq
.....uaagugcuiucccauguuuuCgu.....	1	1	seq
.....uUagugcuiucccauguuuuuggu.....	2	1	seq

hsa-miR-302a-5p**hsa-miR-302a-3p**ccaccacuuuaaacguggaugauacuugcuuugaaacuaaaagaaguaagugcuiuccauguuuuggugaugg

.....	uaagugcuiuccauguuuuggu.....	1	1	seq
.....	uaGgugcuiuccauguuuuggu.....	21	1	seq
.....	uaagugcuiuccauguuuuggu.....	3	1	seq
.....	uGagugcuiuccauguuuuggu.....	19	1	seq
.....	uaagugcuiuccaCguuuuggu.....	8	1	seq
.....	uaagugcuiuccGguuuuggu.....	10	1	seq
.....	uaagugcuiuccauguuuCggu.....	11	1	seq
.....	uaagugcuiuccauguuuugU.....	2	1	seq
.....	Caagugcuiuccauguuuuggu.....	13	1	seq
.....	uaagugcuiuccauguuuuggu.....	18	1	seq
.....	uaagugcuiucccauguuuuggu.....	8	1	seq
.....	uaagugcuiucccauguuuuggu.....	4723	0	seq
.....	uaagugcuiucccauguuuuggu.....	1	1	seq
.....	uaagugcuiuccCgguuuuggu.....	1	1	seq
.....	uaagugcuiuccaAuggu.....	1	1	seq
.....	uaagugcuiucccauAuggu.....	3	1	seq
.....	uaagugcuiucccauguCuuggu.....	9	1	seq
.....	uaagugcuiucccauguuuuggA.....	11	1	seq
.....	uaaAugcuiucccauguuuuggu.....	6	1	seq
.....	Gaagugcuiucccauguuuuggug.....	24	1	seq
.....	uaagugcuiucccauguuuuggug.....	3	1	seq
.....	uaagugcuiucccaugGuuuuggug.....	24	1	seq
.....	uaUgugcuiucccauguuuuggug.....	15	1	seq
.....	uaagugcuiuccaAugguCuuggug.....	66	1	seq
.....	uaagugcuiucccauguuuuggAug.....	24	1	seq
.....	uaagugcuiuccAauguuuuggug.....	8	1	seq
.....	Aaagugcuiucccauguuuuggug.....	21	1	seq
.....	uaagugcuiuccGguuuuggug.....	71	1	seq
.....	uUagugcuiucccauguuuuggug.....	21	1	seq
.....	uaagugcuiucccauguuuuggUug.....	2	1	seq
.....	uaagugcuiucccauguuuuggug.....	36	1	seq
.....	uaagugcuiucccauCuuuuggug.....	1	1	seq
.....	uaaguUciucccauguuuuggug.....	3	1	seq
.....	uaagugUuuucccauguuuuggug.....	26	1	seq
.....	uCagugcuiucccauguuuuggug.....	4	1	seq
.....	uaagugcuiucccauguuuuggCg.....	141	1	seq
.....	uaagugcuiuccAauguuuuggug.....	31	1	seq
.....	uaagugcGuccaAauguuuuggug.....	3	1	seq
.....	uaagugcuiuccaAauguuuuggug.....	55	1	seq
.....	uaagugcuiuccAauguuuuggug.....	3	1	seq
.....	uaagugcuiucccaGguuuuggug.....	13	1	seq
.....	uaagugcuiucccauguuuugguC.....	12	1	seq
.....	uaagugcuiucccauguuuuggug.....	107	1	seq
.....	uaGgugcuiucccauguuuuggug.....	89	1	seq
.....	uaagugcuiuccaAugguCuuggug.....	52	1	seq
.....	uaagugcuiucccauguuuGggug.....	90	1	seq
.....	uaagugcuiucccaugAuuuggug.....	6	1	seq
.....	uaagugcuiuccaAguuuuggug.....	6	1	seq
.....	uaagugAuuucccauguuuuggug.....	1	1	seq
.....	uaagugcuiucccauguuuuggug.....	28838	0	seq
.....	uaagugcuiucccauguGuuggug.....	4	1	seq
.....	uaagugcuiucccauguAuggug.....	3	1	seq
.....	uaagugcuiucccauguuuAugg.....	844	1	seq
.....	uaagugcuiucccauguuuCggug.....	45	1	seq
.....	uaagugcuiuccaCgguuuuggug.....	78	1	seq
.....	uaagugcuiucccauguuuugguU.....	11	1	seq
.....	uaagugcAuccaAugguuggug.....	9	1	seq
.....	uaaguAciuccaAugguuggug.....	52	1	seq
.....	uaagugcuiuccCuguuuuggug.....	7	1	seq
.....	uaagugcCuccaAugguuggug.....	94	1	seq
.....	uaagugcAAccaAugguuggug.....	21	1	seq
.....	uaagugcuiucccauAuuuuggug.....	15	1	seq
.....	uGagugcuiucccauguuuuggug.....	97	1	seq
.....	uaagugcuiucccauguuuAggug.....	10	1	seq
.....	uaagugcuiucccauUuuuuggug.....	2	1	seq
.....	Caagugcuiucccauguuuuggug.....	45	1	seq
.....	uaagugcuiucccauguuuuggu.....	14	1	seq
.....	uaCgugcuiucccauguuuuggug.....	3	1	seq
.....	uaagGgcuiucccauguuuuggug.....	1	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaaacguggaugaucuugcuuugaaacuaaaagaaguaaguguciuuccauguuuuggugau

.....uaagugcuuGcauguuuuggug....	1	1	seq
.....uaagugcuucGauguuuuggug....	2	1	seq
.....uaagCgcuuccauguuuuggug....	77	1	seq
.....uaagugcuuccauguuuugguA....	578	1	seq
.....uaagAgcuuccauguuuuggug....	8	1	seq
.....uaagugcuuccauguuuuggAg....	27	1	seq
.....uaaguCcuccauguuuuggug....	6	1	seq
.....uaagugcuuccauguuGuggug....	1	1	seq
.....uaagugcuGccauguuuuggug....	16	1	seq
.....uaagugcuuccauguuAugug....	5	1	seq
.....uaaAugcuuccauguuuuggug....	17	1	seq
.....uaagugcuuccauguuuugggg....	338	1	seq
.....uUagugcuuccauguuuugguga...	1	1	seq
.....uaaguAcuccauguuuugguga...	2	1	seq
.....uaagugcuucccauguuCugguga...	4	1	seq
.....uaagCgcuucccauguuuugguga...	1	1	seq
.....uaagugcuucccauguuuuggCga...	2	1	seq
.....uaagugcuuccGuguuuugguga...	1	1	seq
.....uaagugcuucccauguuuugguga...	972	0	seq
.....uaagugcuucccauguuuuggC...	5	1	seq
.....uGagugcuucccauguuuugguga...	2	1	seq
.....uaagugcuucUauguuuugguga...	1	1	seq
.....uaagugcuucccauguuuugguga...	4	1	seq
.....uaagugcuucccauAuuuugguga...	1	1	seq
.....uaGgugcuucccauguuuugguga...	3	1	seq
.....uaagugcuucccauguuuugguA...	4	1	seq
.....uaagugcCuccauguuuugguga...	1	1	seq
.....uaagugcuucccaGguuuugguga...	1	1	seq
.....uaagugcuucccauguuuugggGa...	2	1	seq
.....uaagugcuucccauguuuAguga...	1	1	seq
.....uaagugcuucccauguuuuggU...	10	1	seq
.....uaagugcuucccauguuuuggA...	1	1	seq
.....uaagugcuucccauguuuugguga...	5	1	seq
.....uaagugcuucccauguuuuggAuga...	2	1	seq
.....uaagugcuucccaCguuuugguga...	1	1	seq
.....uaagugcuCccauguuuugguga...	8	1	seq
.....uaagugUuuuccaugguuuugguga...	2	1	seq
.....uaagugcuuUcaugguuuugguga...	2	1	seq
.....uaUugugcuucccauguuuugguga...	1	1	seq
.....uaagugcuucccauguuuuggG...	9	1	seq
.....uaagugcuucccauguCiugguga...	3	1	seq
.....uaagAgcuucccauguuuugguga...	1	1	seq
.....uaagugcuucccauguuuAuguga...	2	1	seq
.....uaaAugcuucccauguuuugguga...	1	1	seq
.....uaagugcuucccauguuuugguA...	1	1	seq
.....uaagugcuucccauguuuAgugau...	1	1	seq
.....uaagugcuucccauguuuugguA..	140	1	seq
.....uaagugcuucccauguuuugguau...	4	0	seq
.....uaagugcuucccauguuuugguU..	1	1	seq
.....uaagugcuucccauguuuugguA...	4	1	seq
.....aagugcuucccauguuuAg....	3	1	seq
.....aagugcuucccauguuuugg....	8	0	seq
.....Uagugcuucccauguuuugg....	4	1	seq
.....aagugcuucccauguuuuggU....	1	1	seq
.....aagugcuucccauguuuugg....	20	0	seq
.....aagugcuucccauguuuuggG....	3	1	seq
.....Cagugcuucccauguuuugg....	1	1	seq
.....aagugAuuccaugguuuugg....	1	1	seq
.....aagugcuucccauguuCuggu....	1	1	seq
.....aagugcuucccauguuuugg....	60	0	seq
.....aGGugcuucccauguuuugg....	1	1	seq
.....aagugcuucccauguuuuggC....	3	1	seq
.....aagugcuucccauguuuugg....	1	1	seq
.....aagugcuAccauguuuuggug....	2	1	seq
.....Cagugcuucccauguuuuggug....	1	1	seq
.....aagugcuucccauguuuugguC....	1	1	seq
.....aagugcuucccauguuuAggug....	1	1	seq
.....Uagugcuucccauguuuuggug....	6	1	seq
.....aagugcuucccauguuuuggCg....	8	1	seq

hsa-miR-302a-5p

hsa-miR-302a-3p

ccaccacuuuaaacguggaugaguacuugcuuugaaacuaaagaaguaagugcuuccauguuuuggugaugg

.....	aagugcuCccauguuuuggug....	4	1	seq
.....	aagugcuu <u>ccauguuuug</u> Cug....	1	1	seq
.....	aagugcuu <u>Ucauguuuuggug</u>	2	1	seq
.....	aagugcuu <u>ccauguuuGggug</u>	6	1	seq
.....	aagugcuu <u>ccauguuuuggug</u>	1259	0	seq
.....	aagugcuu <u>ccauguuuuggGg</u>	17	1	seq
.....	aagugcuu <u>Gcauguuuuggug</u>	1	1	seq
.....	<u>Gagugc</u> uu <u>ccauguuuuggug</u>	6	1	seq
.....	aagugcuu <u>Acauguuuuggug</u>	2	1	seq
.....	aag <u>G</u> cuu <u>ccauguuuuggug</u>	2	1	seq
.....	aagugcuu <u>ccauguuuuggug</u>	3	1	seq
.....	aagugcuu <u>ccauguuuAgu</u>	17	1	seq
.....	aagugcuu <u>ccauguuuGuggug</u>	1	1	seq
.....	aagug <u>Au</u> u <u>ccauguuuuggug</u>	1	1	seq
.....	aagug <u>Uu</u> u <u>ccauguuuuggug</u>	1	1	seq
.....	a <u>U</u> gug <u>cuu</u> <u>ccauguuuuggug</u>	1	1	seq
.....	aagugcuu <u>ccauguuuugguA</u>	6	1	seq
.....	aagugcuu <u>ccauguuuCuggug</u>	4	1	seq
.....	aagugcuu <u>ccauguuGuuggug</u>	1	1	seq
.....	aagugcuu <u>ccauguuuAgug</u>	1	1	seq
.....	a <u>G</u> ug <u>cuu</u> <u>ccauguuuuggug</u>	6	1	seq
.....	aagugcuu <u>ccauguuuuggug</u>	1	1	seq
.....	aagugcuu <u>ccauguuuCuuggug</u>	4	1	seq
.....	aagug <u>c</u> u <u>ccauguuuuggug</u>	2	1	seq
.....	<u>aa</u> Aug <u>cuu</u> <u>ccauguuuuggug</u>	1	1	seq
.....	aagugcuu <u>ccGuguuuuggug</u>	3	1	seq
.....	aagugcuu <u>ccauguuuCggug</u>	9	1	seq
.....	aagugcuu <u>ccaucauUuuuuggug</u>	1	1	seq
.....	aagugcuu <u>ccauguuuugguA</u>	1	1	seq
.....	aagugcuu <u>ccauguuuugguG</u>	3	1	seq
.....	aagugcuu <u>ccauguuuugguA</u>	59	0	seq
.....	aagug <u>c</u> u <u>ccauguuuuggug</u>	1	1	seq
.....	<u>Gagugc</u> uu <u>ccauguuuuggug</u>	1	1	seq
.....	aagugcuu <u>ccauguuuuggugA</u>	10	1	seq
.....	agu <u>A</u> cu <u>ccauguuuuggug</u>	1	0	seq
.....	agug <u>cuu</u> <u>ccauguuuuggug</u>	12	0	seq
.....	agug <u>cuu</u> <u>ccauguuuAgug</u>	0	1	seq
.....	agu <u>A</u> cu <u>ccauguuuuggug</u>	1	1	seq
.....	agug <u>cuu</u> <u>ccauguuuGggug</u>	1	1	seq
.....	agug <u>cuu</u> <u>ccauguuuuggCg</u>	1	1	seq
.....	agug <u>cuu</u> <u>ccauguuuAguga</u>	1	1	seq
.....	gug <u>cuu</u> <u>ccauguuuuggu</u>	1	0	seq
.....	gug <u>cuu</u> <u>ccauguuuuggGg</u>	1	1	seq
.....	gug <u>cuu</u> <u>ccauguuuuggug</u>	1	0	seq
.....	ug <u>cuu</u> <u>ccauguuuuggug</u>	4	0	seq
.....	ug <u>cuu</u> <u>ccauguuuugguAa</u>	1	1	seq
.....	g <u>cuu</u> <u>ccauguuuuggug</u>	1	0	seq