

Additional File 2

Naturally Occurring Variations in Sequence Length Creates MiRNA/Isoforms that Differ in Argonaute Effector Complex Specificity.

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In Silico Northern analysis to determine the frequency that all *A. thaliana* miRNAs and their +1, +2 and +3 isoforms are observed in four different argonaute complexes.

For each miRNA the pre-miRNA hairpin as well as the mature miRNA and length isoforms of are given. Values list the number of occurrences each sequence exists in a given dataset. Sequences with no observed occurrences are omitted from the list.

Sequences isolated With:

AGO1 AGO2 AGO4 AGO5

>ath-miR157d MI0000187 Arabidopsis thaliana miR157d stem-loop				
TGACAGAAGATAGAGAGCAC	325	1	9	4
>+1 ath-miR157d				
CTGACAGAAGATAGAGAGCAC	118	0	3	54

>ath-miR156h MI0001083 Arabidopsis thaliana miR156h stem-loop				
TGACAGAAGAAAGAGAGCAC	7	0	2	4
>+1 ath-miR156h				
TTGACAGAAGAAAGAGAGCAC	14	1	13	148

>ath-miR156d MI0000181 Arabidopsis thaliana miR156d stem-loop				
TGACAGAAGAGAGTGAGCAC	3007	1	62	8
>+1 ath-miR156d				
TTGACAGAAGAGAGTGAGCAC	1881	2	28	4

>ath-miR158a MI0000188 Arabidopsis thaliana miR158a stem-loop				
TCCCAAATGTAGACAAAGCA	14422	29	102	167
>+1 ath-miR158a				
TTCCCAAATGTAGACAAAGCA	861	1	2	9

>ath-miR158b MI0001084 Arabidopsis thaliana miR158b stem-loop				
CCCCAAATGTAGACAAAGCA	91	1	1	4
>+1 ath-miR158b				
TCCCCAAATGTAGACAAAGCA	52	0	0	0

>ath-miR160a MI0000190 Arabidopsis thaliana miR160a stem-loop				
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TGCCTGGCTCCCTGTATGCCA	7771	41	6	9
>+1 ath-miR160a				
ATGCCTGGCTCCCTGTATGCCA	229	223	1	0

>ath-miR160c MI0000192 Arabidopsis thaliana miR160c stem-loop				
TGCCTGGCTCCCTGTATGCCA	7771	41	6	9
>+1 ath-miR160c				
ATGCCTGGCTCCCTGTATGCCA	229	223	1	0

>ath-miR161.1 MI0000193 Arabidopsis thaliana miR161 stem-loop				
TGAAAGTGACTACATCGGGGT	122349	13	88	142
>+1 ath-miR161.1				
TTGAAAGTGACTACATCGGGGT	39366	71	100	154

>ath-miR162a MI0000194 Arabidopsis thaliana miR162a stem-loop				
TCGATAAACCTCTGCATCCAG	3314	3	12	13
>+1 ath-miR162a				
ATCGATAAACCTCTGCATCCAG	52	29	0	2

>ath-miR162b MI0000195 Arabidopsis thaliana miR162b stem-loop				
TCGATAAACCTCTGCATCCAG	3314	3	12	13
>+1 ath-miR162b				
ATCGATAAACCTCTGCATCCAG	52	29	0	2

>ath-miR164b MI0000198 Arabidopsis thaliana miR164b stem-loop				
TGGAGAAGCAGGGCACGTGCA	388368	13	396	11
>+1 ath-miR164b				
ATGGAGAAGCAGGGCACGTGCA	1285	0	0	0

>ath-miR164c MI0001087 Arabidopsis thaliana miR164c stem-loop				
TGGAGAAGCAGGGCACGTGCG	388368	13	396	11
>+1 ath-miR164c				
ATGGAGAAGCAGGGCACGTGCG	1285	0	0	0

>ath-miR166a MI0000201 Arabidopsis thaliana miR166a stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166a				
TTGGACCAGGCTTCATTCCCC	126	1	15	91

>ath-miR166b MI0000202 Arabidopsis thaliana miR166b stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166b				
GTCGGACCAGGCTTCATTCCCC	62	0	2	21

>ath-miR166c MI0000203 Arabidopsis thaliana miR166c stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166c				
CTCGGACCAGGCTTCATTCCCC	82	0	0	10

>ath-miR166d MI0000204 Arabidopsis thaliana miR166d stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166d				
CTCGGACCAGGCTTCATTCCCC	82	0	0	10

>ath-miR166e MI0000205 Arabidopsis thaliana miR166e stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166e				
GTCGGACCAGGCTTCATTCCCC	62	0	2	21

>ath-miR166f MI0000206 Arabidopsis thaliana miR166f stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166f				
GTCGGACCAGGCTTCATTCCCC	62	0	2	21

>ath-miR166g MI0000207 Arabidopsis thaliana miR166g stem-loop				
TCGGACCAGGCTTCATTCCCC	4427	21	52	45
>+1 ath-miR166g				
CTCGGACCAGGCTTCATTCCCC	82	0	0	10

>ath-miR167a MI0000208 Arabidopsis thaliana miR167a stem-loop				
TGAAGCTGCCAGCATGATCTA	365764	210	1152	1160
>+1 ath-miR167a				
ATGAAGCTGCCAGCATGATCTA	623	0	0	3

>ath-miR167c MI0001088 Arabidopsis thaliana miR167c stem-loop				
TAAGCTGCCAGCATGATCTTG	93	0	21	9
>+1 ath-miR167c				

TTAAGCTGCCAGCATGATCTTG	6	0	0	1
>ath-miR167d MI0000975 Arabidopsis thaliana miR167d stem-loop				
TGAAGCTGCCAGCATGATCTGG	2727	55	347	21
>+1 ath-miR167d				
CTGAAGCTGCCAGCATGATCTGG	15	0	0	0
>ath-miR168a MI0000210 Arabidopsis thaliana miR168a stem-loop				
TCGCTTGGTGCAGGTCGGGAA	85948	60	571	55
>+1 ath-miR168a				
TTCGCTTGGTGCAGGTCGGGAA	29	0	5	0
>ath-miR168b MI0000211 Arabidopsis thaliana miR168b stem-loop				
TCGCTTGGTGCAGGTCGGGAA	85948	60	571	55
>+1 ath-miR168b				
TTCGCTTGGTGCAGGTCGGGAA	29	0	5	0
>ath-miR172a MI0000215 Arabidopsis thaliana miR172a stem-loop				
AGAATCTTGATGATGCTGCAT	9796	470	1793	717
>+1 ath-miR172a				
GAGAATCTTGATGATGCTGCAT	31	0	45	3
>ath-miR172b MI0000216 Arabidopsis thaliana miR172b stem-loop				
AGAATCTTGATGATGCTGCAT	9796	470	1793	717
>+1 ath-miR172b				
GAGAATCTTGATGATGCTGCAT	31	0	45	3
>ath-miR172c MI0000991 Arabidopsis thaliana miR172c stem-loop				
AGAATCTTGATGATGCTGCAG	9796	470	1793	717
>+1 ath-miR172c				
GAGAATCTTGATGATGCTGCAG	31	0	45	3
>ath-miR172d MI0000992 Arabidopsis thaliana miR172d stem-loop				
AGAATCTTGATGATGCTGCAG	9796	470	1793	717
>+1 ath-miR172d				
GAGAATCTTGATGATGCTGCAG	31	0	45	3

>ath-miR319a MI0000544 Arabidopsis thaliana miR319a stem-loop				
TTGGACTGAAGGGAGCTCCCT	856	112	195	6
>+1 ath-miR319a				
ATTGGACTGAAGGGAGCTCCCT	10	166	7	0
>+2 ath-miR319a				
GATTGGACTGAAGGGAGCTCCCT	137	1	9	0

>ath-miR319b MI0000545 Arabidopsis thaliana miR319b stem-loop				
TTGGACTGAAGGGAGCTCCCT	856	112	195	6
>+1 ath-miR319b				
CTTGGACTGAAGGGAGCTCCCT	37	0	4	1

>ath-miR319c MI0001086 Arabidopsis thaliana miR319c stem-loop				
TTGGACTGAAGGGAGCTCCTT	27	6	35	7
>+1 ath-miR319c				
TTTGGACTGAAGGGAGCTCCTT	66	0	13	1

>ath-miR390a MI0001000 Arabidopsis thaliana miR390a stem-loop				
AAGCTCAGGAGGGATAGCGCC	343	5934	1921	11
>+1 ath-miR390a				
AAAGCTCAGGAGGGATAGCGCC	9	51	66	0

>ath-miR390b MI0001001 Arabidopsis thaliana miR390b stem-loop				
AAGCTCAGGAGGGATAGCGCC	343	5934	1921	11
>+1 ath-miR390b				
AAAGCTCAGGAGGGATAGCGCC	9	51	66	0

>ath-miR396a MI0001013 Arabidopsis thaliana miR396a stem-loop				
TTCCACAGCTTTCTTGAAGT	2334	36	115	54
>+1 ath-miR396a				
CTTCCACAGCTTTCTTGAAGT	254	1	0	2

>ath-miR398a MI0001017 Arabidopsis thaliana miR398a stem-loop				
TGTGTTCTCAGGTCACCCCTT	111885	12	43	245
>+1 ath-miR398a				
TTGTGTTCTCAGGTCACCCCTT	796	9	0	0
>+2 ath-miR398a				
TTTGTGTTCTCAGGTCACCCCTT	32	0	0	0

>ath-miR398b MI0001018 Arabidopsis thaliana miR398b stem-loop				
TGTGTTCTCAGGTCACCCCTG	111885	12	43	245
>+1 ath-miR398b				
ATGTGTTCTCAGGTCACCCCTG	152	8	3	1

>ath-miR398c MI0001019 Arabidopsis thaliana miR398c stem-loop				
TGTGTTCTCAGGTCACCCCTG	111885	12	43	245
>+1 ath-miR398c				
ATGTGTTCTCAGGTCACCCCTG	152	8	3	1

>ath-miR399b MI0001021 Arabidopsis thaliana miR399b stem-loop				
TGCCAAAGGAGAGTTGCCCTG	1154	0	16	1
>+1 ath-miR399b				
CTGCCAAAGGAGAGTTGCCCTG	34	0	0	0

>ath-miR399c MI0001022 Arabidopsis thaliana miR399c stem-loop				
TGCCAAAGGAGAGTTGCCCTG	1154	0	16	1
>+1 ath-miR399c				
TTGCCAAAGGAGAGTTGCCCTG	77	0	0	15

>ath-miR447a MI0002407 Arabidopsis thaliana miR447a stem-loop				
TTGGGGACGAGATGTTTTGTTG	179	0	3	4
>+1 ath-miR447a				
TTTGGGGACGAGATGTTTTGTTG	65	0	1	1

>ath-miR447b MI0002408 Arabidopsis thaliana miR447b stem-loop				
TTGGGGACGAGATGTTTTGTTG	179	0	3	4
>+1 ath-miR447b				
TTTGGGGACGAGATGTTTTGTTG	65	0	1	1

>ath-miR775 MI0005105 Arabidopsis thaliana miR775 stem-loop				
TTCGATGTCTAGCAGTGCCA	1788	4	22	44
>+1 ath-miR775				
TTTCGATGTCTAGCAGTGCCA	38	0	7	81
>+2 ath-miR775				
TTTTCGATGTCTAGCAGTGCCA	409	0	86	1092

>ath-miR777 MI0005107 Arabidopsis thaliana miR777 stem-loop				
TACGCATTGAGTTTCGTTGCTT	2	2	0	0
>+1 ath-miR777				

ATACGCATTGAGTTTCGTTGCTT	0	10	0	0
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>ath-miR780.2 MI0005110 Arabidopsis thaliana miR780 stem-loop				
TTCTTCGTGAATATCTGGCAT	0	0	2	151
>+1 ath-miR780.2				
TTTCTTCGTGAATATCTGGCAT	2	0	0	37
>+3 ath-miR780.2				
GGTTTCTTCGTGAATATCTGGCAT	0	0	15	0

>ath-miR823 MI0005380 Arabidopsis thaliana miR823 stem-loop				
TGGGTGGTGATCATATAAGAT	1544	0	10	0
>+1 ath-miR823				
GTGGGTGGTGATCATATAAGAT	26	1	2	0

>ath-miR844 MI0005400 Arabidopsis thaliana miR844 stem-loop				
TGGTAAGATTGCTTATAAGCT	1	0	1	0
>+1 ath-miR844				
ATGGTAAGATTGCTTATAAGCT	4	4	0	0
>+2 ath-miR844				
AATGGTAAGATTGCTTATAAGCT	0	97	1	1

>ath-miR846 MI0005402 Arabidopsis thaliana miR846 stem-loop				
TTGAATTGAAGTGCTTGAATT	176	0	5	14
>+1 ath-miR846				
TTTGAATTGAAGTGCTTGAATT	13	0	0	0

>ath-miR863-3p MI0005440 Arabidopsis thaliana miR863 stem-loop				
TTGAGAGCAACAAGACATAAT	103	0	1	0
>+1 ath-miR863-3p				
ATTGAGAGCAACAAGACATAAT	1	0	0	0
>+2 ath-miR863-3p				
GATTGAGAGCAACAAGACATAAT	0	0	28	0

Total Sequences	1945650	15734	16551	7734
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