

Supplementary Data 2. *Amphimedon* miRNAs. miRNA (red) and miRNA* (blue) are highlighted. All sequences mapping to locus are included, together with predicted fold. Scaffold and coordinate values reference the *Amphimedon* assembly¹⁶. The location of each miRNA with respect to predicted genes (intergenic or overlapping) is indicated, together with the gene identifier for any overlapping genes. The three columns to the right of each sequence are: (i) length of sequence, (ii) number of reads for that sequence, and (iii) number of matches to the genome.

```
miR-2014
UGCUGGGUUAUUGAGGUCGGCCUGGGGGCAGGUGGAAGAAUUGCGGCCAAAGGAGAGCGAUGGUUGCACUCGACUAGUUCUCUUGCUGCUGGGGUCGUAACCUCUGCCAAACAAAGUCGGAUCUACAAGACCAGCGGU
((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 17843 shared 5' end with miRNA: 9332 shared 3' end with miRNA: 159
Scaffold: Contig13491 Coordinates: 457366-457520 Strand: Minus Location: Intronic; overlapping gene (g29485) is encoded on Plus strand
miRNA
.....UGCCAAACAAGUCGGAUCUACA.....22 7711 1
Shared 5' Terminus
.....UGCCAAACAAGUCGGA.....16 74 1
.....UGCCAAACAAGUCGGA.....17 65 1
.....UGCCAAACAAGUCGGAUC.....18 124 1
.....UGCCAAACAAGUCGGAUC.....19 98 1
.....UGCCAAACAAGUCGGAUCUA.....20 4697 1
.....UGCCAAACAAGUCGGAUCUA.....21 4268 1
.....UGCCAAACAAGUCGGAUCUCAA.....23 6 1
Shared 3' Terminus
.....CAAGUCGGAUCUACA.....15 2 1
.....AAACAAGUCGGAUCUACA.....17 6 1
.....AAACAAGUCGGAUCUACA.....18 20 1
.....CAAACAAGUCGGAUCUACA.....19 10 1
.....CAACAAGUCGGAUCUACA.....20 14 1
.....GCCAAACAAGUCGGAUCUACA.....21 101 1
.....CUGCCAAACAAGUCGGAUCUACA.....23 6 1
Subsequence
.....GCCAAACAAGUCGGA.....15 1 1
.....GCCAAACAAGUCGGA.....16 1 1
.....GCCAAACAAGUCGGAUC.....17 6 1
.....GCCAAACAAGUCGGAUC.....18 1 1
.....GCCAAACAAGUCGGAUCUA.....19 45 1
.....GCCAAACAAGUCGGAUCUA.....20 67 1
.....CCAAACAAGUCGGAUC.....16 1 1
.....CCAAACAAGUCGGAUC.....17 1 1
.....CCAAACAAGUCGGAUCUA.....18 8 1
.....CCAAACAAGUCGGAUCUA.....19 6 1
.....CAACAAGUCGGAUCUA.....17 8 1
.....CAACAAGUCGGAUCUA.....18 4 1
.....AAACAAGUCGGAUCUA.....16 10 1
.....AAACAAGUCGGAUCUA.....17 6 1
.....AAACAAGUCGGAUCUA.....16 3 1
Others
.....UAGGUCGGCCUGGGG.....16 2 1
.....UAGGUCGGCCUGGGGG.....17 1 1
.....UAGGUCGGCCUGGGGG.....18 2 1
.....UAGGUCGGCCUGGGGGC.....19 3 1
.....UAGGUCGGCCUGGGGGCA.....20 10 1
.....UAGGUCGGCCUGGGGGCAG.....21 46 1
.....UAGGUCGGCCUGGGGGCAGG.....22 178 1
.....UAGGUCGGCCUGGGGGCAGGU.....23 22 1
.....AGGUCGGCCUGGGGGC.....18 1 1
.....AGGUCGGCCUGGGGGCAG.....20 5 1
.....AGGUCGGCCUGGGGGCAGG.....21 25 1
.....AGGUCGGCCUGGGGGCAGGU.....22 2 1
.....GGUCGGCCUGGGGG.....16 9 1
.....GGUCGGCCUGGGGGC.....17 4 1
.....GGUCGGCCUGGGGGCA.....18 1 1
.....GGUCGGCCUGGGGGCAG.....19 6 1
.....GGUCGGCCUGGGGGCAGG.....20 57 1
.....GGUCGGCCUGGGGGCAGGU.....21 4 1
.....GUCCGGCCUGGGGGCAGG.....19 6 1
.....GUCCGGCCUGGGGGCAGGU.....20 2 1
.....UCCGGCCUGGGGGCAGG.....18 59 1
.....UCCGGCCUGGGGGCAGGU.....19 3 1
.....CGGGCCUGGGGGCAGG.....17 9 1
.....CGGGCCUGGGGGCAGGU.....18 2 1
.....GGCCUGGGGGCAGG.....16 2 3
.....GGCCUGGGGGCAGGU.....18 1 1
.....AGCGGCAAGGGAGAGC.....16 1 1
.....CGGCAAGGGAGAGCGAUGG.....19 2 1
.....AGUUCUCUUGCUGCUGCGGGCUCGUA.....28 1 1
.....UCCUGCCAAACAAGUCGGA.....19 1 1
.....CUGCCAAACAAGUCGGA.....17 1 1
.....CUGCCAAACAAGUCGGAUCUA.....21 1 1
.....CUGCCAAACAAGUCGGAUCUAC.....22 4 1
```

```
miR-2015
UCUCAUGAUGUAUUGUCAUGUAUUGGAGGGGAGAGACUUUAAGGAGUAGCUUUAUCUGUCUCCAUAGAGUCACCCUCUCCAUAUGCAUGACAAGAAACUAGUGAGA
((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 5501 shared 5' end with miRNA: 640 shared 3' end with miRNA: 52
Scaffold: Contig13453 Coordinates: 293384-293489 Strand: Minus Location: Intergenic
miRNA
.....ACCUCUCCAUAUGCAUGACA.....21 2063 1
Shared 5' Terminus
.....ACCUCUCCAUAUGCAU.....17 19 1
```

```

..... ACCUCUCAUCAUGCAUG..... 18      8      1
..... ACCUCUCAUCAUGCAUGA..... 19     26     1
..... ACCUCUCAUCAUGCAUGC..... 20    587     1

Shared 3' Terminus
..... UCUCAUCAUGCAUGCA..... 16      1      2
..... CUUCAUCAUGCAUGCA..... 17      2      2
..... UCUCAUCAUGCAUGCA..... 18      3      1
..... CUCUCAUCAUGCAUGCA..... 19      6      1
..... CCUCUCAUCAUGCAUGCA..... 20     23      1
..... CACCUCUCAUCAUGCAUGCA..... 22     15      1
..... UCACCUCUCAUCAUGCAUGCA..... 23      2      1

Subsequence
..... CCUCUCAUCAUGCAUGC..... 19     11      1
..... CUCUCAUCAUGCAUGC..... 18      2      1
..... UCUCAUCAUGCAUGC..... 17      1      1
..... CUUCAUCAUGCAUGC..... 16      1      2
..... UCUCAUCAUGCAUGC..... 15      1      4

Others
..... UCAUGUAUUGUGGAGGG..... 17      4      1
..... UCAUGUAUUGUGGAGGGG..... 18     26      1
..... UCAUGUAUUGUGGAGGGGA..... 19    509      1
..... UCAUGUAUUGUGGAGGGGAG..... 20   1031      1
..... UCAUGUAUUGUGGAGGGGAGA..... 21   1086      1
..... UCAUGUAUUGUGGAGGGGAGAGA..... 23      1      1
..... CAUGUAUUGUGGAGGGGA..... 18      4      1
..... CAUGUAUUGUGGAGGGGAG..... 19     13      1
..... CAUGUAUUGUGGAGGGGAGA..... 20     11      1
..... AUGUAUUGUGGAGGGGA..... 17      4      1
..... AUGUAUUGUGGAGGGGAG..... 18      9      1
..... AUGUAUUGUGGAGGGGAGA..... 19      6      1
..... UGUAUUGUGGAGGGGA..... 16      1      1
..... UGUAUUGUGGAGGGGAGA..... 18      1      1
..... GUAUUGUGGAGGGGA..... 15      1      1
..... GUAUUGUGGAGGGGAG..... 16      1      1
..... GUAUUGUGGAGGGGAGA..... 17      4      1
..... AUUGUGGAGGGGAGA..... 15      2      2
..... GACUUUAAGGAGUAGC..... 16      1      1
..... CACCUCUCAUCAUGCAUGC..... 21     15      1

```

```

..... 18      8      1
..... 19     26     1
..... 20    587     1

..... 16      1      2
..... 17      2      2
..... 18      3      1
..... 19      6      1
..... 20     23      1
..... 22     15      1
..... 23      2      1

..... 19     11      1
..... 18      2      1
..... 17      1      1
..... 16      1      2
..... 15      1      4

..... 17      4      1
..... 18     26      1
..... 19    509      1
..... 20   1031      1
..... 21   1086      1
..... 23      1      1
..... 18      4      1
..... 19     13      1
..... 20     11      1
..... 17      4      1
..... 18      9      1
..... 19      6      1
..... 16      1      1
..... 18      1      1
..... 15      1      1
..... 16      1      1
..... 17      4      1
..... 15      2      2
..... 16      1      1
..... 21     15      1

```

```

miR-2016
AGGUGAUUCAAGAGGCACUGAUGAUGGGCTUUGGUCGGCAGAUAGAAUAAAAGAGAUUAAGUUUUUGCCUUUUUCAAAGAAGACACUAGCUUGAUGCAACUCUAAAUCUGCUGUCAGCCAGGCGAGUCUCAGCAGU
.((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 37606 shared 5' end with miRNA: 12659 shared 3' end with miRNA: 519
Scaffold: Contig13514 Coordinates: 90512-90665 Strand: Minus Location: Intergenic
miRNA

```

```

..... UAGAUGGGCTUUGGUCGGCAG..... 22     24016    2

Shared 5' Terminus
..... UAGAUGGGCTUUGGU..... 15      4      2
..... UAGAUGGGCTUUGGUC..... 16     47      2
..... UAGAUGGGCTUUGGUCG..... 17     33      2
..... UAGAUGGGCTUUGGUCGG..... 18    1090     2
..... UAGAUGGGCTUUGGUCGCG..... 19    558      2
..... UAGAUGGGCTUUGGUCGGCA..... 20    1807     2
..... UAGAUGGGCTUUGGUCGGCAG..... 21    8946     2
..... UAGAUGGGCTUUGGUCGGCAGAU..... 23     173      2
..... UAGAUGGGCTUUGGUCGGCAGAU..... 24      1      2

Shared 3' Terminus
..... GGCUUGGUCGGCAG..... 15      9      2
..... GGGCUUGGUCGGCAG..... 16     45      2
..... UGGGCUUGGUCGGCAG..... 17     69      2
..... UUGGGCUUGGUCGGCAG..... 18     74      2
..... AUUGGGCUUGGUCGGCAG..... 19     13      2
..... GAUUGGGCUUGGUCGGCAG..... 20     49      2
..... AGAUUGGGCUUGGUCGGCAG..... 21    260      2

Subsequence
..... AGAUUGGGCTUUGGUC..... 15      1      2
..... AGAUUGGGCTUUGGUCG..... 16      2      2
..... AGAUUGGGCTUUGGUCGG..... 17     14      2
..... AGAUUGGGCTUUGGUCGCG..... 18     10      2
..... AGAUUGGGCTUUGGUCGGCA..... 19     27      2
..... AGAUUGGGCTUUGGUCGGCAG..... 20    107      2
..... GAUUGGGCTUUGGUCGG..... 16      2      2
..... GAUUGGGCTUUGGUCGGCA..... 18      5      2
..... GAUUGGGCTUUGGUCGGCAG..... 19     38      2
..... AUUGGGCTUUGGUCGCG..... 16      1      2
..... AUUGGGCTUUGGUCGGCA..... 17      4      2
..... AUUGGGCTUUGGUCGGCAG..... 18     18      2
..... UUGGGCTUUGGUCGCG..... 15      4      2
..... UUGGGCTUUGGUCGGCA..... 16      9      2
..... UUGGGCTUUGGUCGGCAG..... 17     53      2
..... UGGGCUUGGUCGGCA..... 15      3      2
..... UGGGCUUGGUCGGCAG..... 16     83      2
..... GGGCUUGGUCGGCAG..... 15      2      2

Others
..... AGAUUGGGCTUUGGUCGGCAGAU..... 22      1      2
..... GAUUGGGCTUUGGUCGGCAGAU..... 21      1      2
..... GGCUUGGUCGGCAGAU..... 16      1      2
..... GAGAUUAAGUUUUUGCCU..... 19      1      1

```

```

..... 22     24016    2

..... 15      4      2
..... 16     47      2
..... 17     33      2
..... 18    1090     2
..... 19    558      2
..... 20    1807     2
..... 21    8946     2
..... 23     173      2
..... 24      1      2

..... 15      9      2
..... 16     45      2
..... 17     69      2
..... 18     74      2
..... 19     13      2
..... 20     49      2
..... 21    260      2

..... 15      1      2
..... 16      2      2
..... 17     14      2
..... 18     10      2
..... 19     27      2
..... 20    107      2
..... 16      2      2
..... 18      5      2
..... 19     38      2
..... 16      1      2
..... 17      4      2
..... 18     18      2
..... 15      4      2
..... 16      9      2
..... 17     53      2
..... 15      3      2
..... 16     83      2
..... 15      2      2

..... 22      1      2
..... 21      1      2
..... 16      1      2
..... 19      1      1
..... 18      1      1
..... 20      2      1
..... 21      9      1
..... 22      7      1
..... 19      2      1
..... 20      2      1
..... 21      1      1
..... 18      1      1

```

```

miR-2017
AAUGGAUGAGGGGAUUGAGUACACCGGGGUAUGGUUAGUCUCCAGCAAGGAUUAUUAUUAAAGUCUUAUAAGCACUACCCUGGACCCUGUGUGCCAAACCUAUAUC
((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 1725 shared 5' end with miRNA: 891 shared 3' end with miRNA: 31
Scaffold: Contig13219 Coordinates: 71849-71963 Strand: Minus Location: Intergenic
miRNA
.....UACCCUGGACCCUGUGUGCCAA..... 22 640 1
Shared 5' Terminus
.....UACCCUGGACCCUGUG..... 16 16 1
.....UACCCUGGACCCUGUGU..... 17 38 1
.....UACCCUGGACCCUGUGUG..... 18 71 1
.....UACCCUGGACCCUGUGUGC..... 19 176 1
.....UACCCUGGACCCUGUGUGCC..... 20 66 1
.....UACCCUGGACCCUGUGUGCC..... 21 518 1
.....UACCCUGGACCCUGUGUGCCAA..... 23 6 1
Shared 3' Terminus
.....UGUGACCCUGUGUGCCAA..... 18 1 1
.....CCUGGACCCUGUGUGCCAA..... 20 9 1
.....ACCUGGACCCUGUGUGCCAA..... 21 18 1
.....CUACCCUGGACCCUGUGUGCCAA..... 23 3 1
Subsequence
.....ACCUGGACCCUGUG..... 15 3 1
.....ACCUGGACCCUGUGUGC..... 18 2 1
.....ACCUGGACCCUGUGUGCC..... 20 11 1
.....CCUGGACCCUGUGUGCC..... 19 3 1
.....CUGGACCCUGUGUGCC..... 18 1 1
Others
.....AGUACACGGGGUAUGG..... 16 4 1
.....AGUACACGGGGUAUGGG..... 17 1 1
.....AGUACACGGGGUAUGGGU..... 18 2 1
.....AGUACACGGGGUAUGGGUA..... 19 2 1
.....AGUACACGGGGUAUGGGUAG..... 20 11 1
.....AGUACACGGGGUAUGGGUAGU..... 21 93 1
.....GUACACGGGGUAUGGG..... 16 1 1
.....GUACACGGGGUAUGGGUAG..... 19 2 1
.....GUACACGGGGUAUGGGUAGU..... 20 2 1
.....UACACGGGGUAUGGGU..... 16 1 1
.....UACACGGGGUAUGGGUAG..... 18 1 1
.....UACACGGGGUAUGGGUAGU..... 19 4 1
.....UACACGGGGUAUGGGUAGUG..... 20 1 1
.....ACACGGGGUAUGGGUAG..... 17 3 1
.....ACACGGGGUAUGGGUAGU..... 18 4 1
.....CACGGGGUAUGGGUAGU..... 17 1 1
.....ACGGGGUAUGGGUAG..... 15 4 2
.....ACGGGGUAUGGGUAGU..... 16 3 1
.....CGGGGAUGGGUAGU..... 15 1 1
.....GCUCCAGCAAGGAUUAUA..... 20 1 1
.....CUACCCUGGACCCUGUGUGCC..... 22 1 1

```

```

miR-2018
CUGCAUGAGUUACAGUGUGUCGAGCCGGAGGUUCCGGAAGAAAGUAAAAGCCCAUGCAGGCAUUGGAAUGACUAAACCGGUUGUACUGGUUUGUCCAUGUUGUGGCAUUGGCUAGCCUCGGGACCCUUGGACCCUGACACACAGUGCCCAUGCA
((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 1529 shared 5' end with miRNA: 149 shared 3' end with miRNA: 4
Scaffold: Contig13491 Coordinates: 58767-58926 Strand: Minus Location: Intergenic
miRNA
.....UGUCGAGCCGGAGGUUCCGGA..... 22 1160 1
Shared 5' Terminus
.....UGUCGAGCCGGAGG..... 15 1 1
.....UGUCGAGCCGGAGGU..... 17 6 1
.....UGUCGAGCCGGAGGUU..... 18 6 1
.....UGUCGAGCCGGAGGUUCC..... 19 9 1
.....UGUCGAGCCGGAGGUUCCG..... 20 3 1
.....UGUCGAGCCGGAGGUUCCGG..... 21 122 1
.....UGUCGAGCCGGAGGUUCCGGAG..... 23 2 1
Shared 3' Terminus
.....GUCGAGCCGGAGGUUCCGGA..... 21 4 1
Subsequence
.....UCGGAGCCGGAGGUUCCGG..... 19 1 1
Others
.....UCGGAGCCGGAGGUUCCGGAG..... 21 1 1
.....UGGAAUGACAUAACCGGUUGU..... 22 5 1
.....CGGGACCUUGGACCUUGGAC..... 19 1 1
.....CGGGACCUUGGACCUUGGAC..... 20 8 1
.....CGGGACCUUGGACCUUGGAC..... 21 25 1
.....CGGGACCUUGGACCUUGGAC..... 22 107 1
.....GGGACCUUGGACCUUGGAC..... 17 1 1
.....GGGACCUUGGACCUUGGAC..... 19 10 1
.....GGGACCUUGGACCUUGGAC..... 20 10 1
.....GGGACCUUGGACCUUGGAC..... 21 45 1
.....GGACCUUGGACCUUGGAC..... 19 1 1
.....ACCUUGGACCUUGGAC..... 18 1 1

```

```

miR-2019
GAGACUGGCCGCCGUACCGAUUAAGAGUGAUCGGGUUCCGUCUGAGCUCUAGCUAGCAUACCAGGCUUUGUUAACUUAACAGUCCUAGAGAAGGUCUUGGCUACACGGUAGCUUUGCUAUAAGAAACGGCCGAGGCGCUACU
((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((((
Total cloned: 11574 shared 5' end with miRNA: 5999 shared 3' end with miRNA: 56
Scaffold: Contig13362 Coordinates: 48947-49095 Strand: Plus Location: Intergenic
miRNA
.....AAAGUGAUCGGGUUCCGUCUG..... 22 4484 1
Shared 5' Terminus
.....AAAGUGAUCGGGUU..... 15 38 1
.....AAAGUGAUCGGGUUUC..... 16 51 1
.....AAAGUGAUCGGGUUUGCC..... 17 61 1
.....AAAGUGAUCGGGUUUGCCG..... 18 264 1
.....AAAGUGAUCGGGUUUGCCGU..... 19 125 1
.....AAAGUGAUCGGGUUUGCCGUC..... 20 164 1
.....AAAGUGAUCGGGUUUGCCGUCU..... 21 4121 1

```


.....	.UGGUCGGUGUUUCGUGGA.....	18	17	1
.....	GUGGUCGGUGUUUCGUGGA.....	19	2	1
.....	.GGUGGUCGGUGUUUCGUGGA.....	20	25	1
Subsequence				
.....	.GGUGGUCGGUGUUUCGUGG.....	19	12	1
.....	GUGGUCGGUGUUUCGUGG.....	18	1	1
.....	.UGGUCGGUGUUUCGUG.....	16	1	1
.....	.UGGUCGGUGUUUCGUGG.....	17	4	1
.....	.GGUCGGUGUUUCGUGG.....	16	2	1
Others				
.....	CAUGGAAUAUCGGCACCCA.....	19	1	1
.....	CAUGGAAUAUCGGCACCCAU.....	20	8	1
.....	CAUGGAAUAUCGGCACCCAUC.....	21	25	1
.....	UGGAAUAUCGGCACCCA.....	17	1	1