

Supplementary Figure 1. Predicted fold-back structures of the new miRNA precursors from rice.

OsmiR435 ($\Delta G = -121.6$)

```

CU--  -- A  CG          A  C          CAU -  .-CCUAGCA  A  UG  .-CC  A  A  AGUCGA -  AACA
ACUCUU  CUU  GUCUA  UUUCAUCUCUACUCUCAA  ACUGGA  AAAACAUGUCCU  CU  UC  CUAGUUUAG  G  GUUUUUUGC  AUGUGG  CU  CUUGGCU  CU  UGCAU  A
UGAGAA  GAA  CAGGU  AAAGUAGGGAGUUGAGGUU  UGGCCU  UUUUGUACAGGGA  GA  AG  GAUUAAGUU  C  UAAAAGCG  UGUACC  GA  GAAUCGA  GA  AUGUA  A
UAUU  CU  C  UA          A  A          UUU  U  \  -----  C  GU  \  --  -  -  GUGG--  C  CAGU
    
```

OsmiR437 ($\Delta G = -100.0$)

```

          UG  UU  U  G  A  U  U  AAUUAAACAUCUAAAAU  AU  CA-  A
CCCUCUGUUUCAUUAU  UA  GUGUUU  AGUUUUUUU  UAAGUCAAA  UUCUUU  ACUUUGACCAAGUUUUGUAG  AAAAU  ACCAA  AAAUA  CU  U
GGGAGACAAGGUUAU  AU  CACAAA  UCAAAACAG  AUUCAGUUU  AAGAGA  UGAAA  CUGGUUCAAAUAUC  UUUUA  UGGUU  UUUAU  GA  U
          GU  UC  -  G  G  U  GU-----  C-  ACA  G
    
```

OsmiR438 ($\Delta G = -59.0$)

```

          UGUUUU  CAAACU  UUU  U  -  UG  .-AUG  GUAU  A
AACG  GGG  UG  UCCCACGCGUUA  AGUGAAAACUUUUGGAAU  AUGUU  UU  GGA  AUAUU  \
UUGC  CCU  AC  AGGGUGCGCAAU  UCACUUUUGAAAACUUUG  UACAG  GG  UCU  UAUAG  U
          CU----  UCAUCU  UAU  U  G  GU  \  ---  AGGU  U
    
```

OsmiR390 ($\Delta G = -55.9$)

```

          U  U  U  A  G  CGAAA
GGUA  GGAACAA  CC  UG  AGCUCAGGA  GGAUAGCGCCU  U
CCAU  UCUUGUU  GG  AC  UCGAGUCCU  UCUAUCGCGGA  C
          -  U  U  C  A  UCAAA
    
```

OsmiR439a ($\Delta G = -61.9$)

```

          UGA  A  U--  UGU
UACCCUGUCGAAC  CGC  GUUCGACA  GUACCUGUCGAAC  \
GUGGGACAGCUUG  GCG  CAAGCUGU  UAUGGAUAGCUUG  G
          UUG  C  CCC  UUG
    
```

OsmiR439b

```

UU  UG  G  U  U
CCUGUCGAAU  U  GU  GUUCGAUAGG  A
GGACAGCUUG  G  CG  CAAGCUGUCC  C
--  UU  G  C  C
    
```

OsmiR439c

```

          UGA  A  U--  UGU
UACCCUGUCGAAC  CGC  GUUCGACA  GUACCUGUCGAAC  \
GUGGGACAGCUUG  GCG  CAAGCUGU  UAUGGAUAGCUUG  G
          UUG  C  CCC  UUG
    
```

OsmiR439d

```
CCACC          UCA UA          U--          UGU
  UACCCUGUCGAAC  CG  GUUCGACA  GUACCCUGUCGAAC  \
  GUGGGAUAGCUUG  GC  CAAGCUGU  UAUGGAUAGCUUG  G
-----          UUG  GC          CCC          UUG
```

OsmiR439e

```
CCACC          UGA  A          U--          UGU
  UACCCUGUCGAAC  CGC GUUCGACA  GUACCCUGUCGAAC  \
  GUGGGACAGCUUG  GCG CAAGCUGU  UAUGGAUAGCUUG  G
-----          UUG  C          CCC          UUG
```

OsmiR439f

```
ACC           UGA  A          U--          UGU
  UACCCUGUCGAAC  CGC GUUCGACA  GUACCCUGUCGAAC  \
  GUGGGACAGCUUG  GCG CAAGCUGU  UAUGGAUAGCUUG  G
---           UUG  C          CCC          UUG
```

OsmiR439g

```
U           UGA  A          U--          UGU
  CCUGUCGAAC  CGC GUUCGACA  GUACCCUGUCGAAC  \
  GGACAGCUUG  GCG CAAGCUGU  UAUGGAUAGCUUG  G
-           UUG  C          CCC          UUG
```

OsmiR439h

```
ACCACC          UCA  A          U--          UGU
  UACCCUGUCGAAC  CGC GUUCGACA  GUACCCUGUCGAAC  \
  GUGGGACAGCUUG  GCG CAAGCUGU  UAUGGAUAGCUUG  G
-----          UUG  C          CCC          UUG
```

OsmiR439i

```
CACC--          UGA  A          U--          UGU
  UACCCUGUCGAAC  CGC GUUCGACA  GUACCCUGUCGAAC  \
  GUGGGACAGCUUG  GCG CAAGCUGU  UAUGGAUAGCUUG  G
CAAUUC          UUG  C          CCC          UUG
```

OsmiR439j

```
          C          U  U  A  C  CA
ACAGGGUACC UAUCGAACAACUGCGGUUCGACA--GG ACC AUUGG CUG CA  \
UGUCCCAUGG AUAGCUUGUUGCGCCAAGCUGU  CC UGG UGAUC GAC GU  C
-          \  -  U  G  A  UU
```

OsmiR440 ($\Delta G = -62.4$)

```
          A  UG  C  G  C          C          U  CAA  -  CC
AUUGCU U  UUGGUG UGG CU GUCCUGAUCA UAGGAGAC CUGAU  GC UAGG  U
```

UAGCGA A AGCCAC AUC GA CAGGGCUAGU GUCCUCUG GAUUA UG AUUC A
G GU A G A A U --- U AA

OsmiR396d ($\Delta G = -92.3$)

GCG C CA G .-U G UG
AAAGAUGU GGCAUG UUUCCA GGCUUUCUUGAACUGU AAC CGUGGG G U
UUUCUGCG CCGUAC AAAGGU CCGAAAGAACUUGGUA UUG GUACUC U A
--- C AC G \ - G GU

OsmiR396e

G C CA G .-U G UG
GCGG CAUG UUUCCA GGCUUUCUUGAACUGU AAC CGUGGG G U
CGCC GUAC AAAGGU CCGAAAGAACUUGGUA UUG GUACUC U A
- C AC G \ - G GU

OsmiR441a ($\Delta G = -67.4$)

AAAAUAUAUU G UU UA A A C CUAGAU
AAUUG UACU CUC UUU ACAUUGUAAGUCAUUUUAGCAUUUC CACAUA AUUUGAU U
UUAAU AUGA GAG AAA UGUUACAUUCAGUAAAAUCGUAAAG GUGUAA UAUAAUCUA C
AAAAC----- G GG GC G G A A CCAUUA

OsmiR441b

UUAUCACCACUGACAUA CC C G A UU C UUA- AUC
CUUCCU GUUUCA AAUGUAAGUCAUUUUA UA UU CAUAUU AUUUGAUG AUGA U
GAGGGA CAAAGU UUACAUCAGUAAGAU GU AA GUGUAA UAUAAUCUAC UACU A
AC----- UA A G A GG A CAUG CAG

OsmiR441c

C UU GAU
UACUCCUCUGUUUCAUAUUGUAAGU AUUUUAGCAUUU CAUAUUUAUUAUGAUGGUAUUGAAUCUAGAUA A
AUGAAGGAGGCCAAAGUGUUACAUAUA UAAGAUCGUAAA GUGUAAAUAUAAUCUACCAUUACUUAAGAUCUGU U
A GG AUA

OsmiR442 ($\Delta G = -79.8$)

A A AUAAU AAAA U- UA-- UGA -- CUU C AUGAUCUGAC GG U
CACAUU UGGAGUAUU AAU GA AAUAC AAU UACAGA CGU GUAAAUUGCGAGACGAUU UUAAGCCUAAUUG UCC AAUGU UGC A
GUGUGUA ACUUCAUAA UUG CU UUAUUG UUG AUGUCU GCA CAUUUGACGCUCUGCUUA AAUUCGGAUUAAU AGG UUAUA AUG C
A A CAU--- GA-- UU UUAU UAG GA AAU U CAGUAUCGU A- A

OsmiR443 ($\Delta G = -74.4$)

CAU-- CCC AG---- A A -- A
CGUCC AAAAACAAA AAAACU AUGUGAUUAUC CA UACAUAUAAUCUGGAUAGGAG UCU U

GCAGG UUUUUUGUUU UUUUGA UACACUGUAUAG GU AUGUUUUUAGAUCUAUCUUC AGA C
UUUUU AUA CUUAUA G C AU C

OsmiR445a ($\Delta G = -141.0$)

A - G AAA A UC AUGAAA C A C AU A .-AUGAAA U
UCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAACAUA ACUAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAAUUUUUU AG CUAUUUA CCAU AUU AG U
AGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUUAGAAAA UC GAUUAU GGUA UAA UC U
C A G AUA A GA GGAACC A C A GU C \ ----- A

OsmiR445b

G A - GAC AA- A UC AUGAAA C C A C AU A .-AUGAAA U
GUCC UGUCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAACAUA UAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAA UUUUU AG CUAUUUA CCAU AUU AG U
CAGG ACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUU GAAAA UC GAUUAU GGUA UAA UC U
G C A GUA AUA A GA GGAACC A C A GU C \ ----- A

OsmiR445c

CC A - C G AAA A UC AUGAAA CU AU A .-AUGAAA U
GUGUCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAACAUA ACUAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAAUUUUUAGCCUUAUUUA CCAU AUU AG U
UACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA UGCUUCUGCUUAGAAAAUUCGGAUUAU GGUA UAA UC U
A- C A A G AUA A GA GGAACC AG GU C \ ----- A

OsmiR445d

-- AA A AUG AAAA AUG CCC-- C CCU GA C UG UCUA A C GAUGCU
UGG CCAA UUUAGUCCUUCACAUUG AUGUUUG ACACUAAUU GUUUUAAACAUAAGACUA ACAA AUU CAUAA G UUAUUUGG GAGA AA UUGAGUCUAAUUAAUC AUGAUUAGC UAUUU \

OsmiR445e

G A - G AAA A UC AUGAAA C A C AU A .-AUGAAA U
GUCC UGUCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAACAUA ACUAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAAUUUUUU AG CUAUUUA CCAU AUU AG U
CAGG ACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUUAGAAAA UC GAUUAU GGUA UAA UC U
G C A GUA AUA A GA GGAACC A C A GU C \ ----- A

OsmiR445f

- AAAAC U G A - G AAA A UC AUGAAA C A C AU A .-AUGAAA U
AGAU GGGGU UUUU AGUC UGUCACAUUG AUGUUUG ACACUAAUUUGGAGUAUUAAACAUA ACUAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAAUUUUUU AG CUAUUUA CCAU AUU AG U
UUUG CCCGUA AAAA UCAGG ACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUUAGAAAA UC GAUUAU GGUA UAA UC U
U AU-- U G C A GUA AUA A GA GGAACC A C A GU C \ ----- A

OsmiR445g

U G A - G AAA UA UC AUGAAA C A CC AU A .-AUGAAA U
UUU AGUCC UGUCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAACAUA ACUAAU AAAAC AUU AUAA GCUAAU UGCGAGACGAAUUUUUU AG UAAUUUA CCAU AUU AG U
AAA UCAGG ACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUUAGAAAA UC AUUAU GGUA UAA UC U
U G C A GUA AUA A GA GGAACC A C AA GU C \ ----- A

OsmiR445h

U G A - G AAA A UC AUGAAA C A C AU A .-AUGAAA U
UUUU AGUCC UGUCACAUUG AUGUUUG ACACUAAUUUGGAGUAUUAAACAUA ACUAAU AAAACU AUU AUAA GCUAAU UGCGAGACGAAUUUUUU AG CUAUUUA CCAU AUU AG U
AAAA UCAGG ACAGUGUAGC UACAAAU UGUGAUUAAAUCUCAUAAUUUGUAU UGAUUA UUUUGG UAA UAUU UGAUUA GCGCUCUGCUUAGAAAA UC GAUUAU GGUA UAA UC U
U G C A GUA AUA A GA GGAACC A C A GU C \ ----- A

OsmiR445i

UUU G A - G AAA A UC AUGAAA C .-AAGCC AU
ACUU AGUCC UGUCACAUUG AUGUUUG ACGCUAAUUUGGAGUAUUAAAUUA ACUAAU AAAACU AUU AUAA GCUAAU UGUGAGAUGAAUUUUU UAAUUUA \

OsmiR446 ($\Delta G = -91.4$)

```
AAA-----          C  A  AA          C          U  GAU
  UAUGUACUCCUUUGUUUCACAGUGUAAGU AUU UA  AUUCCCA AUUUAAUUGAUGUUAAUGAAUCUA AUA  A
  AUAUAUGAGGGAGGCAAAGUGUUACAUUCA UAA AU  UAAAGGGU UAAGUUAACUACA AUUAUUUAGAU UGU  U
CAAGUUCAAG          A  G  GG          A          C  AUA
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