

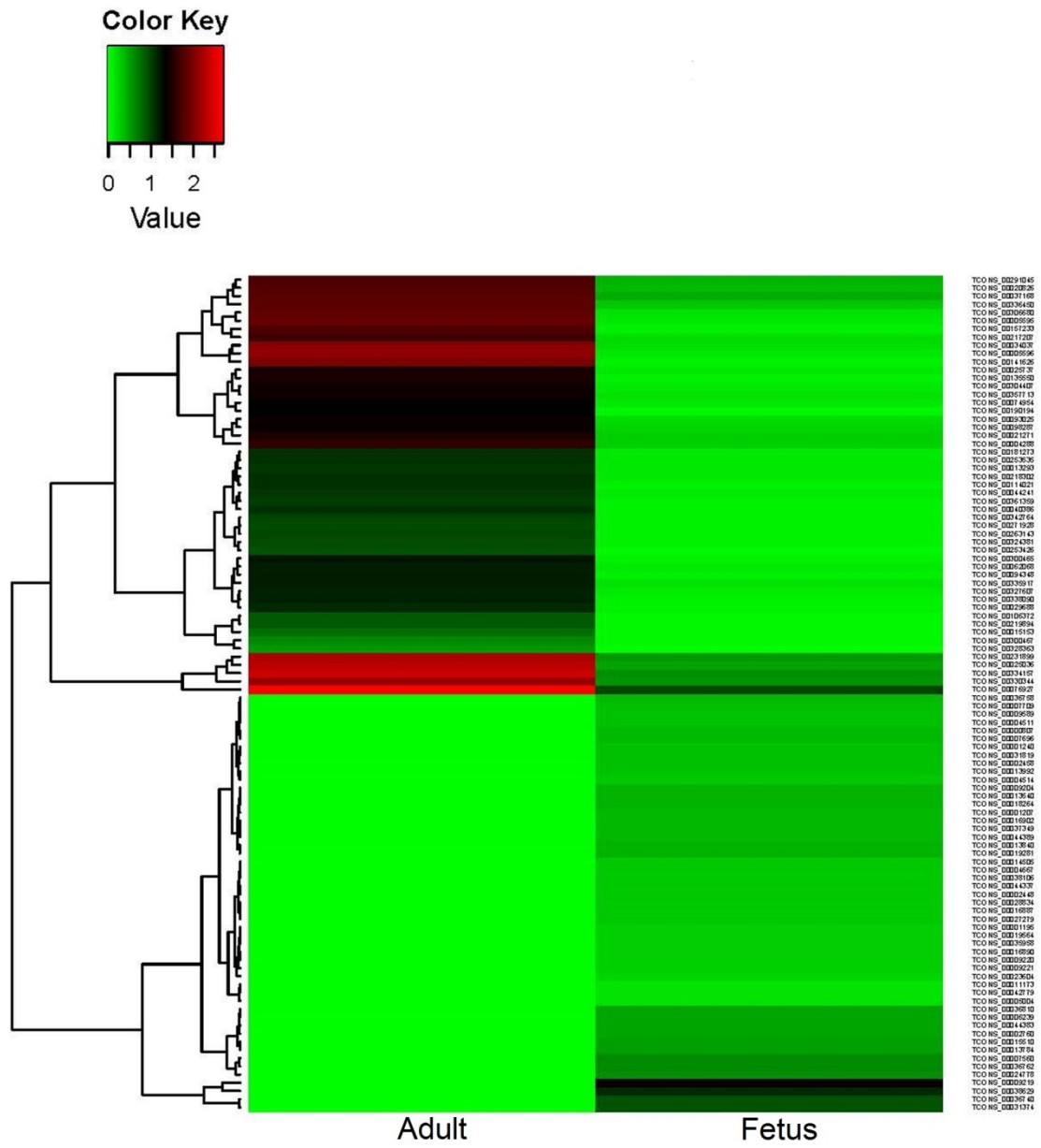
OMTN, Volume 12

## **Supplemental Information**

### **Long Non-coding RNA Profiling Reveals an Abundant MDNCR that Promotes Differentiation of Myoblasts by Sponging miR-133a**

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Figure S1



**Figure S1. Clustered heat map showing abundances of randomly selected 100 differentially expressed lncRNAs.**

**Table S5a primers for qPCR**

<b>Name</b>	<b>Forward primer 5'→3'</b>	<b>Reverse primer 5'→3'</b>
MDNCR	TCATGCCTGGGACTTGGAAC	GTGGGTCGTCCGTTCCCTTTA
PCNA	TCCAGAACAAGAGTATAGC	TACAACAGCATCTCCAAT
CyclinD1	CCGTCCATGCGGAAGATC	CAGGAAGCGGTCCAGGTAG
β-actin	CATCCTGACCCTCAAGTA	CTCGTTGTAGAAGGTGTG
MyoG	CAAATCCACTCCCTGAAA	GCATAGGAAGAGATGAACA
MyhC	TGCTCATCTCACCAAGTTCC	CACTCTTCACTCTCATGGACC
MyoD	ACGGCATGATGGACTACAGC	AGGCAGTCGAGGCTCGACA
Bcl-2	ATGACCGAGTACCTGAAC	CATACAGCTCCACAAAGG
Bax	GAGATGAATTGGACAGTAACA	TTGAAGTTGCCGTCAGAA
Caspase-9	TGGTGGTCATCCTGTCTC	CATCCATCTGTGCCATAAAC
Caspase-3	CAGCGTCGTAGCTGAACGTA	CCAGAGTCCATTGATTTGCTTCC
bta-miR-133a	GTGCTTTGGTCCCCTTCAAC	GCAGGGTCCGAGGTATTC
U6	GCTTCGGCAGCACATATACTAAAAT	CGCTTCACGAATTTGCGTGTCAT

**Table S5b primers for vector construction**

Name	Primer sequence 5'→3'
pcDNA-MDNCR-F	CCCA <u>AAGCTT</u> GCATTCATCCCGGTCAATTTT
pcDNA-MDNCR-R	GGGGTACCAGTTTATTGATGAGTCCAGGGCA
pCK-MDNCR-W-F	CCGCTCGAGGCATTCATCCCGGTCAATTTT
pCK-MDNCR-W-R	ATAAGAATGCGGCCGCAGTTTATTGATGAGTCCAGGGCA
pCK-GosB-3'UTR-W-F	CCGCTCGAG AGCTTTAGACAAAACAAACAAACAC
pCK-GosB-3'UTR-W-R	ATAAGAATGCGGCCGCCTTTATTGGCGACAGTGCAGA
pCK-miR-133a 2×-F	GCTCGAGCAGCTGGTTGAAGGGGACCAAACAGCTGG TTGAAGGGGACCAAA
pCK-miR-133a 2×-R	GGCGGCCGCCTTTGGTCCCCTTCAACCAGCTGTTTGGTC CCCTTCAACCAGCTG

Notes: The nucleotide with underline is the restriction enzyme cutting site.

**Text S1. Sequence of cattle MDNCR.**

**lncRNA MDNCR**

GCATTCATCCCGGTCAATTTTGGTTTCAGATCGTGGCGACTGGTGGACAGGGGTCTTGA  
CAGAGGCTCGCCCTGGGGCTGGGGCAGCGGAGGCGTAGCTGGCAGCCGTGGGCAGGT  
GAAGACAGCGCTCTGCCGGCCAGGTGAGTCCCCTTCTCCTCGCTGGTCCTTGCTCTCC  
TGGTCTCCTGCAGAAGGAGGTTCTGGGGAGCGCGGGCCAGCGAGGTGGAGAGGCTG  
GCCTCCCGGCAGAGCAGGACGCAGGCTGGTCAGGCAGCACAGGTGATATCGTCTCAG  
GGGAGCTGAGACAGGGCGGGCTGGGGGCCGCGGGATGGGGTGCCGCGGGCTGCCCC  
AGGTGGCAAGGGCATTTCAGAGAGCCAGGCGGGAGCTTAGCAGGCAGGGCTGCCAG  
CACGTGTAGGGGGCACTCAGGCCCCCCGGGGCAGCAGGACAGGGTGGGGACTCAGG  
ACAGAGGGGTTCAGCCGCCACTTCACCCACTGTAATCACTTAGTAGTAGGTCACA  
GGAGCGGCTCCGGCCAGGCGTTCTCAGGCCTGAGCCAGAGCCTCGAGGGCCGGAGAA  
TGAGAGAGAAGGCAGCGCAGTGCGCGGGCAACCGCGGCGGGATGTCATCTGGGGGG  
CGGTGGCCGCGGGACAGGCCCGGAGAGATACCTGCAGCAGGGAGGCTGCGCGGGCCC  
AGCCCGTGGACGCCAGCCCCACGCAGCACTGCGGGCCCCGGGAGCCACGCGGGAGGGC  
CCCAGTGCACCTGGGGACACTGGGGACACTTGACCCGAACCGCTGGCCCTTGGGATG  
GGCATGAGAGATAGAACAGCACCCAGGGGAGTCAAGGACACGGGGCAGACCAGGCT  
AGGTGGGGCGGGTGGGGGGCGTGAATGTGCACTCTCGGGGGAAGGGAGGCCAGGG  
CACAGGCAGGGGGCAGGGGGCCAGAGCCGGGCACCGAGCCAGTGGGAGGGGCATTGG  
ACTTCGAGCTCGTGGCCAAGGCGGGCCTCTGCGGGCGATGACGGAGCGGGATCGGTG  
CCTCTGAGCTCGGAACGGAGACGGAGCCACGTCTCCAGTGGGGTGTGGTGCCTGCC  
AGCCACGGAGGCCGGGCGGGCCAGGACGCGCACAGAGGGATATGATATGGTCCGGTGT  
GATGGAGAGAGCAGGCGGGACCGTCCAGCCTCCCAGGACACTGGCCCCGCGGGGAG  
CCCGGATATCGACGTTCCCTTTAGTCTCCTGACGGAGCAGACACACCACTGCTGCTCTTC  
AGACACCCAGAACCCTCAAGATGACAAGAGATGGTGCTACCCAGCTCATGCCTGGGA  
CTTGGAACACGGACTTCTTCAAGTCTTCTAGCTCTGACTCAAGAATATGCTGCATTTG  
GAACCACTACACACCCTAACTCAGGAATCAGCTCTGGAAGGTTGACCTAAAGGAACG  
GACGACCCACACCACCGGAAGAGCAGCCCCGCGGCGACACCCACCCCGGCCCGGC  
GACTCCATCTCTGCGGCCCCCCCTGCCTCAGCCCCGAGACCACCGACAGCCTCCCTC  
CCTCCTTTTCTCCTTTTCTGACTCTATTTTCTGATCTTCTCTCTGCTATCCTTTGCTCAG  
GAGACTCAGAGCCTCCAGAGCCCCGTTCTCCCCGTCCCCCTTGAATCAATTTGCACTA  
AAAGTCGTTTGCAGTGGTTGGGGCTCTGGAGCCAGCCCTGGTCTCTGAGCGTGTGTAA  
GCGCGCGTGTGTGCACACTGCTGAATGTGTAGGCCTCCTTGGCCCCTGCCCCCGCCA  
GCACCCTTCCCACACTTGCGGGTGCCTGGGAGGGGGCCCGAGTGGGGGGGCCCGCGT  
GTGAGGGGGCCCCGCCCCGACCGAGTCTGGAGGCTCCGAACATCAGGAGCACAC  
ACCAAGCATGAACGTGTGTCCATCTTGCTAGTGTCCCTCCCTGCCAGGGCCTCCTCAG  
ATGCCCTGGACTCATCAATAAACTCAGT

**Text S2. Cattle MDNCR sequence revealed the presence of thirty-two putative miR-133a binding sites.**

Version: RNAhybrid 2.2

Command line:/vol/bioapps/bin/RNAhybrid.bin -n 22 -q  
/var/bibiserv2/anonymous/rnahybrid/29/09/40/bibiserv2\_2017-07-29\_094018\_50b4M/rnahybrid\_i  
nput\_mirna\_sequences.file -b 40 -m 1974 -s 3utr\_human -t  
/var/bibiserv2/anonymous/rnahybrid/29/09/40/bibiserv2\_2017-07-29\_094018\_50b4M/rnahybrid\_i  
nput\_target\_rna\_sequences\_.file

searching

dataset: 1

mde of bta-miR-133a: -49.200005

Individual hits

-----  
dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -31.6 kcal/mol

p-value: 1.000000e+00

position 1789

```
target 5' U G GCCUG C G 3'
          GC GGU GGAGGGGGCC GA
          CG CCA CUUCCCCUGG UU
miRNA 3' GU A A U 5'
```

-----  
dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -30.0 kcal/mol

p-value: 1.000000e+00

position 890

```
target 5' C GG A G 3'
```

```
          GG GAAGGG GGCCAGG
          CC CUUCCC CUGGUUU
miRNA 3' GUCGA AA                5'
```

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -28.8 kcal/mol  
p-value: 1.000000e+00

position 913  
target 5' A A GGC G 3'  
 GGC GG GAGGGG CCAGA  
 UCG CC UUCCCC GGUUU  
miRNA 3' G A AAC U 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -28.6 kcal/mol  
p-value: 1.000000e+00

position 305  
target 5' G GGGCCGCG U U C 3'  
 GGCUGG GGA GGGG GCCG  
 UCGACC CUU CCCC UGGU  
miRNA 3' G AA UU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a



length: 22

mfe: -28.6 kcal/mol

p-value: 1.000000e+00

position 859

```
target 5' G G          GU A 3'
          GGC GGU GGGGGGC GA
          UCG CCA UCCCCUG UU
miRNA 3' G A AC      GU 5'
```

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -28.0 kcal/mol

p-value: 1.000000e+00

position 253

```
target 5' A      CAGGCAGCACAGG UAUCGUCUC      G A 3'
          GGCUGGU          UGA      AGGGGA CUGAG
          UCGACCA          ACU      UCCCCU GGUUU
miRNA 3' G                                5'
```

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -26.5 kcal/mol

p-value: 1.000000e+00

position 432

```
target 5' G A ACAG GU      U A 3'
          AGC GG      G GGGGAC CAGG
          UCG CC      C CCCCUG GUUU
miRNA 3' G A AA  UU          5'
```

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -26.4 kcal/mol  
p-value: 1.000000e+00

position 188  
target 5' A GA CUGG C C C 3'  
AG GGUU GGAG G GGGCCAG  
UC CCAA CUUC C CCUGGU  
miRNA 3' G GA U 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -26.3 kcal/mol  
p-value: 1.000000e+00

position 605  
target 5' G G A UCAUCU G U 3'  
CGGC GG UG GGGGGC G  
GUCG CC AC UCCCCUG U  
miRNA 3' A A U G UU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -26.2 kcal/mol

p-value: 1.000000e+00

position 1077

```
target 5' C   CAC AG CC   C       A 3'
        CAGC  GG  G  GGG GGCCAGG
        GUCG  CC  C  CCC CUGGUUU
miRNA 3'   A   AA UU           5'
```

-----

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -26.2 kcal/mol

p-value: 1.000000e+00

position 1669

```
target 5'   A       GG CUCU   G   C 3'
        CUGGUUG  G   GGA CCAG
        GACCAAC  C   CCU GGUU
miRNA 3' GUC       UU C           U 5'
```

-----

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -25.7 kcal/mol

p-value: 1.000000e+00

position 391

```
target 5' G   CCAGCACG  U       A   3'
        GGCUG           UG AGGGGGC
        UCGAC           AC UCCCCUG
miRNA 3' G   CA       U       GUUU 5'
```

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -24.5 kcal/mol  
p-value: 1.000000e+00

position 971  
target 5' G C GGCC C U 3'  
AGCU GU AAGG GGGCC  
UCGA CA UUCC CCUGG  
miRNA 3' G C AC UUU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -24.3 kcal/mol  
p-value: 1.000000e+00

position 37  
target 5' C A G C UCUUGA G 3'  
G CUGGU GA AGGGG CAGA  
C GACCA CU UCCCC GUUU  
miRNA 3' GU A UG 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -24.3 kcal/mol  
p-value: 1.000000e+00

position 996

```
target 5' G   GAUGAC   C       U 3'
          CGGC       GGAG GGAUCGG
          GUCG       CUUC CCCUGGUU
miRNA  3'   ACCAA           U 5'
```

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -24.1 kcal/mol  
p-value: 1.000000e+00

position 1394  
target 5' U CUGGAA CCUAA AAC G 3'  
 CAGCU GGUUGA AGG GGAC  
 GUCGA CCAACU UCC CCUG  
miRNA 3' GUUU 5'

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -23.8 kcal/mol  
p-value: 1.000000e+00

position 75  
target 5' G GGCAGC CGUAGCU CA U 3'  
 GGCUGG GGAGG GG GCCG  
 UCGACC CUUCC CC UGGU  
miRNA 3' G AA UU 5'

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -23.8 kcal/mol

p-value: 1.000000e+00

position 1125

```
target 5' U   CC   GUGA   AGAGCAGGC   U   3'
          GGU  GGU   UGGAG   GGGACCG
          UCG  CCA   ACUUC   CCCUGGU
miRNA  3' G   A                               UU  5'
```

-----

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -23.2 kcal/mol

p-value: 1.000000e+00

position 342

```
target 5' C   G   C       CAUUU   G   3'
          CAG  UGG   AAGGG   CCAGA
          GUC  ACC   UUCCC   GGUUU
miRNA  3'   G   AAC   CU           5'
```

-----

dataset: 1

target: TCONS\_00238678

length: 1973

miRNA : bta-miR-133a

length: 22

mfe: -23.1 kcal/mol

p-value: 1.000000e+00

position 742

```
target 5' C   GCACU   GGACACU   A   3'
          CAGU   UGG   GGGGAC
          GUCG   ACC   CCCUG
```

miRNA 3' AACUU GUUU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -22.9 kcal/mol  
p-value: 1.000000e+00

position 1814  
target 5' G GG C C 3'  
UG GGGG CCG  
AC CCCC GGU  
miRNA 3' GUCGACCA UU U UU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -22.8 kcal/mol  
p-value: 1.000000e+00

position 944  
target 5' G CA G C C 3'  
AGC GU GGAGGGG AUUGGA  
UCG CA CUUCCCC UGGUUU  
miRNA 3' G AC A 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -22.2 kcal/mol  
p-value: 1.000000e+00

position 1173

```
target 5' A      CCCC GC      U 3'
          CA CUGG      GGGGA CCGGA
          GU GACC      CCCC GGUU
miRNA 3'  C  AACUU      5'
```

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -22.1 kcal/mol  
p-value: 1.000000e+00

position 661

```
target 5' G      A GA CUGC C      C      C 3'
          CAGC GG GG      G GGG CCAG
          GUCG CC CU      C CCC GGUU
miRNA 3'      A AA U      U      U 5'
```

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -21.9 kcal/mol  
p-value: 1.000000e+00

position 502

```
target 5' G      A CACA      C CUCC      G 3'
          UAGU GGU      GGAG GG      GGCCAG
          GUCG CCA      CUUC CC      CUGGUU
miRNA 3'      A A      U      U 5'
```

---



dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -21.9 kcal/mol  
p-value: 1.000000e+00

position 813

```
target 5' A   ACCCAG GAGUCAAG CAC  C A   G 3'
          CAGC   GG      GA  GGG G GACCAG
          GUCG   CC      CU  UCC C CUGGUU
miRNA  3'   A     AA                               U 5'
```

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -21.5 kcal/mol  
p-value: 1.000000e+00

position 781

```
target 5' C   CCCUU      G  C 3'
          GCUGG      GGGAU GG
          CGACC      CCCUG UU
miRNA  3' GU   AACUUC      G  U 5'
```

-----

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -21.4 kcal/mol  
p-value: 1.000000e+00

position 1825  
target 5' N GUG            CC C 3'  
          GC    UGAGGGG CCG  
          CG    ACUUCCC GGU  
miRNA 3' GU ACCA            CU UU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -21.1 kcal/mol  
p-value: 1.000000e+00

position 1027  
target 5' G    C AAC    AC A    C 3'  
          AGCU GG    GGAG    GG GCCA  
          UCGA CC    CUUC    CC UGGU  
miRNA 3' G            AA            C    UU 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -20.7 kcal/mol  
p-value: 1.000000e+00

position 213  
target 5' N GA            A CU    U 3'  
          GC GGU GGAG GG    GGCC  
          CG CCA CUUC CC    CUGG  
miRNA 3' GU A    A            UUU 5'

---

dataset: 1  
target: TCONS\_00238678

length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -20.6 kcal/mol  
p-value: 1.000000e+00

position 109  
target 5' G A ACAGCGCUCUGCC U 3'  
GGC GGU GAAG GGCCAGG  
UCG CCA CUUC CUGGUUU  
miRNA 3' G A A CC 5'

---

dataset: 1  
target: TCONS\_00238678  
length: 1973  
miRNA : bta-miR-133a  
length: 22

mfe: -20.2 kcal/mol  
p-value: 1.000000e+00

position 1291  
target 5' C CA CCU U 3'  
CAGCU UG GGGACU  
GUCGA AC CCCUGG  
miRNA 3' CCA UUC UUU 5'

---

**Text S3. Cattle GosB gene 3'UTR revealed the presence of eighteen putative miR-133a binding sites.**

Version: RNAhybrid 2.2

Command line:/vol/bioapps/bin/RNAhybrid.bin -n 22 -q  
/var/bibiserv2/anonymous/rnahybrid/08/08/21/bibiserv2\_2018-01-08\_082157\_fRwfX/rnahybrid\_i  
nput\_mirna\_sequences.file -D -b 30 -m 2200 -t  
/var/bibiserv2/anonymous/rnahybrid/08/08/21/bibiserv2\_2018-01-08\_082157\_fRwfX/rnahybrid\_i  
nput\_target\_rna\_sequences\_.file

searching

dataset: 1

mde of bta-miR-133a: -49.200005

Individual hits

-----  
dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -30.9 kcal/mol

p-value: undefined

position 209

target	5'	G		CUUU		A		G	3'
			AGCUGG	UGA		GGGGGC		CGGG	
			UCGACC	ACU		CCCCUG		GUUU	
miRNA	3'	G		A		U			5'

-----  
dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -28.5 kcal/mol

p-value: undefined

position 344

target	5'	G		AGG		C		UG	U	3'
--------	----	---	--	-----	--	---	--	----	---	----

```
          GGCUGG  GAG GGGG  U
          UCGACC  CUU CCCC  G
miRNA 3' G      AA          UG UUU 5'
```

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -28.5 kcal/mol  
p-value: undefined

position 880  
target 5' G CCGGAUUG GG A U 3'  
 AGUUGG UG GGG GCCGGG  
 UCGACC AC CCC UGGUUU  
miRNA 3' G A UU C 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -27.8 kcal/mol  
p-value: undefined

position 1892  
target 5' C CGUCUUCUGACUC GUU UU U 3'  
 CAGC UGG UG GGGGACC  
 GUCG ACC AC CCCCUGG  
miRNA 3' A UU UUU 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a

length: 22

mfe: -27.4 kcal/mol

p-value: undefined

position 307

```
target 5' G A GG GU G G 3'
          GG UGG G GGGGGC GGA
          UC ACC C CCCCUG UUU
miRNA 3' G G AA UU G 5'
```

dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -27.0 kcal/mol

p-value: undefined

position 232

```
target 5' N GG G C 3'
          GGU GGAGGGGAU GA
          CCA CUCCCCUG UU
miRNA 3' GUCGA A G U 5'
```

dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -26.6 kcal/mol

p-value: undefined

position 1198

```
target 5' G AAC GA UUGCC C 3'
          AGC GG GA AGGGGGCC
          UCG CC CU UCCCCUGG
miRNA 3' G A AA UUU 5'
```

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -26.1 kcal/mol  
p-value: undefined

position 2124  
target 5' G C CACU C 3'  
GGCUGG UGG GGGCCG  
UCGACC ACU CCUGGU  
miRNA 3' G A UCC UU 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -25.9 kcal/mol  
p-value: undefined

position 372  
target 5' G GG U G 3'  
GGCUG UG G GGGCUGGA  
UCGAC AC C CCUGGUUU  
miRNA 3' G CA UU C 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -24.9 kcal/mol

p-value: undefined

position 64

```
target 5'  A   AG GAG   AGAGA  G 3'
          CUGG GA  AGGGGA  CAAA
          GACC CU  UCCCCU  GUUU
miRNA 3' GUC  AA      G      5'
```

---

dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -23.3 kcal/mol

p-value: undefined

position 805

```
target 5'  U   GCCUCUC  UUCAGGCAGC  G 3'
          GUUGG   UGA      AGGGGGC
          CGACC   ACU      UCCCCUG
miRNA 3' GU  A      GUUU 5'
```

---

dataset: 1

target: GosB 3'UTR

length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -23.2 kcal/mol

p-value: undefined

position 2009

```
target 5'  A      CA  U 3'
          GGCUG  UGAG  GGGCC
          UCGAC  ACUU  CCUGG
miRNA 3' G  CA  CC  UUU 5'
```

---



dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -22.1 kcal/mol  
p-value: undefined

position 1006  
target 5' G A ACUC UGA A 3'  
AGUU G GAGGGG CAGA  
UCGA C CUUCCC GUUU  
miRNA 3' G C AA UG 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -21.7 kcal/mol  
p-value: undefined

position 1287  
target 5' U A CAAACUCC GG U 3'  
GG CUGG AAGGGG CU G  
UC GACC UUCCCC GG U  
miRNA 3' G AAC U UU 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -21.6 kcal/mol  
p-value: undefined

position 136

```
target 5' C   CCAUCG C   A   U   3'
          GCUG   GA AGG GGACU
          CGAC   CU UCC CCUGG
miRNA  3' GU   CAA           UUU 5'
```

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -21.2 kcal/mol  
p-value: undefined

position 1781  
target 5' U UUUUCU U 3'  
 CUGGUUG GGCCA  
 GACCAAC CUGGU  
miRNA 3' GUC UUCCC UU 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200  
miRNA : bta-miR-133a  
length: 22

mfe: -20.5 kcal/mol  
p-value: undefined

position 474  
target 5' A CUCCCU C 3'  
 GGCUGGUU GCCG  
 UCGACCAA UGGU  
miRNA 3' G CUUCCCC UU 5'

---

dataset: 1  
target: GosB 3'UTR  
length: 2200

miRNA : bta-miR-133a

length: 22

mfe: -20.3 kcal/mol

p-value: undefined

position 269

```
target 5' U   CC U   CCGUUUCACUU   C   3'
          GCUG  UG GGG           GGACC
          CGAC  AC UCC           CCUGG
miRNA  3' GU   CA U           UUU 5'
```

-----