

Supplementary Materials

Table S1. List of miRNAs used in current study with their sequences, used prediction tools and conservation status.

| Target gene | microRNA | Sequence | Tools | Conservation (based on TargetScan) |
|-------------|-----------------|-------------------------|---------|------------------------------------|
| hMANF | hsa-miR-141-5p | CAUCUUCCAGUACAGUGUUGGA | D | N/A |
| | hsa-miR-144-3p | UACAGUAUAGAUGAUGUACU | M | N/A |
| | hsa-miR-544a | AUUCUGCAUUUUUAGCAAGUUC | M | N/A |
| | hsa-miR-338-3p | UCCAGCAUCAGUGAUUUUGUUG | M, T | Conserved |
| hCDNF | hsa-miR-134-5p | UGUGACUGGUUGACCAGAGGGG | M, T, D | Poorly conserved |
| | hsa-miR-141-5p | CAUCUUCCAGUACAGUGUUGGA | D, T | Poorly conserved |
| | hsa-miR-190a-5p | UGAUAUGUUUGAUUAUUAUAGGU | M, T | Poorly conserved |
| | hsa-miR-382-5p | GAAGUUGUUCGUGGUGGAUUCG | M, T, D | Poorly conserved |
| | hsa-miR-539 | GGAGAAAUUAUCCUUGGUGUGU | M, T, D | Poorly conserved |
| | hsa-miR-599 | GUUGUGUCAGUUUAUCAAAC | M, T, D | Poorly conserved |

M – miRanda; T – TargetScan; D – Diana Tools microT-CDS

Table S2. List of miRNA mimics used in this study

| miRNA mimic | miRIDIAN catalog number |
|--------------------|--------------------------------|
| hsa-miR-134-5p | C-300628-05-0002 |
| hsa-miR-141-5p | C-301056-01-0002 |
| hsa-miR-144-3p | C-300612-05-0002 |
| hsa-miR-190a-5p | C-300639-03-0002 |
| hsa-miR-338-3p | C-300706-05-0002 |
| hsa-miR-382-5p | C-300691-03-0002 |
| hsa-miR-539-5p | C-300859-01-0002 |
| hsa-miR-544 | C-300860-03-0002 |
| hsa-miR-599 | C-300923-01-0002 |
| NC (Scrb) mimic | CN-001000-01-05 |

Table S3. List of PCR primers used for amplification of 3'UTRs of MANF and CDNF (both human and mouse).

| PCR primers | Primer sequences (F: forward; R: reverse) |
|------------------------|---|
| Human MANF 3'UTR | F: 5' TCGCTCGAGTCTGCTCAATCTCTGTTGCAC R: 5' AGAGCGGCCCGCAGGAGCCTCCTGGGGCA |
| Human CDNF 3'UTR | F: 5' TCGCTCGAGTCTCCAATGCCAGCACATTTGT R: 5' AGAGCGGCCCGCCCAAGTTGCCTATGAGTGTTTTTA |
| Mouse MANF fragment | F: 5' TGCCTAAATACGCCCCCAAG R: 5' GTTTCGCTCGCTGCCTATCA |
| Mouse MANF 3'UTR | F: 5' TAGGCGATCGCTCGAGTCTGCCCAATTCCTGCTGCACCTG R: 5' TTGCGGCCAGCGGCCGCTCGGGGCCACGCCC |
| Mouse CDNF 3'UTR | F: 5' TAGGCGATCGCTCGAGCCCCGTCGGCTGTCAG R: 5' TTGCGGCCAGCGGCCGCAATGTATATTTATTATCTGAATTTAAGTTATTC TCTTGCGGCCAGCGGCC |

Table S4. List of PCR primers used for site-directed mutagenesis.

| miRNA, which binding site to be mutated | | Primer sequences (F: forward; R: reverse) |
|---|----------|---|
| hCDNF | miR-134 | F: 5'-TTCATTCCCTTACAacCACATATCAGACAAG R: 5'-AAAGACCTTGAGCTTGGTTCAATTAACAAT |
| | miR-141 | F: 5'-AAGTTTTTGATGGggGATTAAAGCATAT R: 5'-GTCTGATATGTGACTGTAAGGAATGAAAAA |
| | miR-190a | F: 5'-CCTTACAGTCACAcgTCAGACAAGTT R: 5'-AATGAAAAAGACCTTGAGCTTGGTTC |
| | miR-382 | F: 5'-TATCTAATGCACggCTTCAATCCCAAATAC R: 5'-AGCTGACTGTTGTGTCTTTTGTTTTAGTCC |
| hMANF | miR-144 | F: 5'-TCCTGACAATAagGTATCAGATGTGA R: 5'-GCCCACTTAAAAAATAAATTACAAAAAGG |
| | miR-544 | F: 5'-TAGCTGTCCTTGcAATTATAGTGAA R: 5'-GAAATTTTTTTTCTTTAATAAAAAAATCCC |

Table S5. List of PCR primers used for RT-qPCR analysis of ER stress markers expression.

| PCR primers | Primer sequences (F: forward; R: reverse) |
|-------------|--|
| Human BiP | F 5' ACCCTGACTCGGGCCAAAT R: 5' AGACCGGAACAGATCCATGTTG |
| Human ATF6 | F: 5' GGATGAAGTTGTGTCAGAGAACC R: 5' GACAACTCTTCGCTTTGGACTAG |
| Human CHOP | F: 5' CCAGCAGAGGTCACAAGCA R: 5' TGACTGGAATCTGGAGAGTGAG |
| Human XBP1s | F: 5' GAGTCCGCAGCAGGTG R: 5' CCGCCAGAATCCATGGG |
| Human GAPDH | F: 5' TTGAGGTCAATGAAGGGGTC R: 5' GAAGGTGAAGGTCGGAGTCA |

A

B

mMANF 3'UTR

UCUGCCCAAUCCUGUCACCUGAAGGGGAAAAAGCAGUUUAUCUGUCUCUUCGCCAAUAACCAUUUUGUAUUUUUUUUU

GUUGUUUUAGUGACUACGACCU

UAAAGCGGGCUCUGACAAUGAGAUGUGAACCUAGAGCUUUCUAGUGAUGGUCUCUGCAGUUCGCCUUGGCCAUCCCCG
 AGUGGGGACAAUUCGCCAUCCCCAAGUGGGGACAAUUUACUUCUUCUUGGUGUUUACUCUAGGACUUCAAAGUUUUGUC
 UGGGAUUUUUUUUAUAAAAAAUUGUCUUUGGAGAGUUGAGCUGGCACAGUAUUCUGUCCUUAUAGAUUACUGGUUUUAUCUU
 UCCAGUCUGGAAAGAACUCCUACGCCUGGCAGUCUGAGGCGUAGAACUCCUAAACAGGACCUUAAAGAGCUUGGGGACGCCAA
 UGUCUUGUGGGUUUGGGCUUGCGGUGUCUGAUACUUCUACGCCUGGUGAGGUUAGACUUGACCCUAGCCCCACCCCCAAC
 CAGUCCAGUAGCAGGGGCUGAAGGUUCUUGAGCUGCUGUUAAGUCUAAAGGACAUUUACAUUUGGCUCAGCCUUAUGCAGAAG
 GAGAACUGUGAGCUGAGUACAGGUGGUUCAGACCAUAGCGUAUCUUUACCCCGCCUGGUACUUAACUUAUUCAUUACUGGGG
 UUCCAGUCUAGCAUCAGAACAAGGACCCUUGCUUACCUUUAUUUUUGGCAAGGUUGGCAGGAUUCGGUUUACAAGAAGCAGU
 GUGAGCUGGUUUAGUGAGGGAAGGCCUGAGGGAGGUUGAGUCUAGUGGUUUUACUUGCUCUCCUUUGCGGCACUUGUAGAAC
 UGUGCCUCAGUGGGGAACUUUGCUCUUGCGUCCUCCAGAGAUAAUGAGAAGGAGCAUCUGCUAAGAAGUUAUGUUUUCCA
 AAAGGCUCGUUUAGCUAUCUUUCUGUGUGGCCCAAUUCACUUUGCAUUCGACGGGGCCUUAUAGUAGGCCCUUGCUGU
 UUCUCCAAGUUCUCCUGCAGUUUCUCCUUGCUGUGUUCUUCGUUUAGGGAGGAGGAAGAGCUGGGUGCGUUCU
 UCGACAUCUACAGAUCAUCAUUAUGAUCCAGCAACCGUCUGUGGAGAGCAUAAAGCCUAGGGGGCCUUGAGUACUCUUGCCG
 GUACUUAACCUCAUCUCCUGGAUGUGGUCAGAACUUGGCCAGCAGUCUGUCAACUUGGCAAGAAGUGAUAAUGGCAUUACC
 UGCUUUUUACCUUUGGCUACGACGCCCAACCUUCCGACGCCUUGCUGCCGACACCUACAGCAGAAUUUUGGACCCAGU
 GGCACCAAGAUGCCUGUCUGUAGGUUUGCAACGCAUUCUAGUUUUGUACCUAGGACCCCGGGGAGGUCUACCUUGUCUA
 UCAGGACAGUGCCUUGAAGAAUUCGAUUGCAUUAAGAUUGCCUGUUGGUGUUGGCUUAGGCAGGGUGUAGGCAUCUUGUGUGUC
 UAUUUUACAAGGGGGCCCAACUCUGGUCCUAAUUCAGAAACUUGGAGGAAUUAAGAUUUUCUUAUUGGCGAGGUUG
 GAGUGGGGACGCGCAACACUUGGCUUUGCGGCCAAGCGGCCACACCUUGUCCGGUGGGGUGGCCCCGAGGCGG