

Supplementary Table 1 Primers used in this manuscript.

Primers	Sequence (5'-3')
Mettl3-F	TGCTGTGCCTTTCTTAGTTGTC
Mettl3-floxR	AGGCTCAGTCCTCCTCACAA
Mettl3-koR	GATTTCAGTGTGCTTATTG
Cre-F	CATATTGGCAGAACGAAAACGC
Cre-R	CCTGTTTCACTATCCAGGTTACGG
m-Pref1-F	GACCCACCCTGTGACCCC
m-Pref1-R	CAGGCAGCTCGTGCACCCC
m-Adipsin-F	CGTACCATGACGGGGTAGTC
m-Adipsin-R	ATCCGGTAGGATGACACTCG
m-Pparg1a-F	CCCTGCCATTGTTAAGACC
m-Pparg1a-R	TGCTGCTGTTCTCTGTTTTT
m-Cidea-F	GGTGGACACAGAGGAGTTCTTTC
m-Cidea-R	CGAAGGTGACTCTGGCTATTCC
m-Pparg-F	GGAAGACCACTCGCATTCCCTT
m-Pparg-R	GTAATCAGCAACCATTGGGTCA
m-Adrb3-F	TCTCTGGCTTTGTGGTCGGA
m-Adrb3-R	GTTGGTTATGGTCTGTAGTCTCG
m-Ucp1-F	GAGGTCGTGAAGGTCAGAAT
m-Ucp1-R	CTGTGGTGGCTATAACTCTGTAA
m-Prdm16-F	CCACCAGCGAGGACTTCAC
m-Prdm16-R	GGAGGACTCTCGTAGCTCGAA
m-Cox8b-F	GAACCATGAAGCCAACGACT
m-Cox8b-R	GCGAAGTTCACAGTGGTTCC
m-Dio2-F	GGTGGTCAACTTTGGTTACGC
m-Dio2-R	AAGTCAGCCACCGAGGAGAACT
m-Hsl-F	GCTGGGCTGTCAAGCACTGT
m-Hsl-R	GTAAGTGGTAGGCTGCCAT
m-Acox1-F	GCCATTGATACAGTGTGTGAG
m-Acox1-R	CCGAGAAAGTGAAGGCATAGG
m-Klf9-F	GGATTATTGCACGCTGGTCAC
m-Klf9-R	ATCCTCATCGGGACTCTCCA
m-Igf2bp1-F	TACAAGTGTTCATCCCCGCC
m-Igf2bp1-R	AGGTGTTTCTGGTGGTGCAA
m-Igf2bp2-F	ACCAAACGCCAGACGAGAAT
m-Igf2bp2-R	CCTGATCTTGCGTTGTGCAG
m-Igf2bp3-F	CTACGCGTTCGTGGACTG
m-Igf2bp3-R	AGTTTACGAATCCTCTGCCGTT
m-Mettl3-F	CTGGGCACTTGGATTAAAGGAA
m-Mettl3-R	TGAGAGGTGGTGTAGCAACTT
Luciferase-F	CTAAGGAAGTCGGGGAAGCG
Luciferase-R	ATCCCCCTCGGGTGTAAATCA
18S rRNA-F	GTAACCCGTTGAACCCCAT
18S rRNA-R	CCATCCAATCGGTAGTAGCG
m-Mettl16-F	TTGACATAGGTACTGGGGCATC
m-Mettl16-R	CGGGAATTTACACCCTTGGC
pCDH-hMettl3-F	ACCTCCATAGAAGATTCTAGAGCCACCATGTCGGACACGTG
pCDH-hMettl3-R	TTCGAATTCGCTAGCTCTAGActaCTTATCGTCATCGTCCTTGTAATCTAAATTCTTAGGTTTAGA GATGAT
pCDH-hMettl16-F	ACCTCCATAGAAGATTCTAGAGCCACCATGGCTCTGAGTAAATCAATG
pCDH-hMettl16-R	TTCGAATTCGCTAGCTCTAGActaCTTATCGTCATCGTCCTTGTAATCGTTAACTGCAACAAGCCT
pAAV-MCS-mKlf9-CDS-F	ATTTCGAACATCGATTGAATTCATGTCCGCGGCCG
pAAV-MCS-mKlf9-CDS-R	CAGGTCGACTCTAGAGGATCCTCACAAAGGGGCTGGCA
pGL3-control-mKlf9-CDS-F	AGATCGCCGTGTAATTCTAGAGTGTGAGAAGAGATTTCATGAGGA
pGL3-control-mKlf9-CDS-R	GCCGGCCGCCCCGACTCTAGAAAGTCAGAGACGGTTCAGAGT
pGL3-control-mKlf9-3'UTR-F	AGATCGCCGTGTAATTCTAGAAAAAACCACCCCTCCATAGC
pGL3-control-mKlf9-3'UTR-R	GCCGGCCGCCCCGACTCTAGACCCATCTTTGCCATAGGTTCTC
shMettl3-F	CCGGCCTCAGTGGATCTGTTGTGATCTCGAGATCACAACAGATCCACTGAGGTTTTTG
shMettl3-R	AATTCAAAAACCTCAGTGGATCTGTTGTGATCTCGAGATCACAACAGATCCACTGAGG
shIgf2bp1-F	CCGGGAAACACCTGACTCCAAAGTTCTCGAGAACTTTGGAGTCAGGTGTTCTTTTG
shIgf2bp1-R	AATTCAAAAAGAAACACCTGACTCCAAAGTTCTCGAGAACTTTGGAGTCAGGTGTTTC
shIgf2bp2-F	CCGGCCGTTGTCAACGTCACCTATACTCGAGTATAGGTGACGTTGACAACGGTTTTTG
shIgf2bp2-R	AATTCAAAAACCGTTGTCAACGTCACCTATACTCGAGTATAGGTGACGTTGACAACGG
shIgf2bp3-F	CCGGCGGCAGAGGATTTCGTAACCTTCTCGAGAAGTTTACGAATCCTCTGCCGTTTTTG
shIgf2bp3-R	AATTCAAAAACGGCAGAGGATTCGTAACTTCTCGAGAAGTTTACGAATCCTCTGCCG

Supplementary Table 2 Information of antibodies used in this study

Antibody	Source	Catalog Number
anti-METTL3	Abcam	ab195352
anti-UCP1	Proteintech	23673-1-AP
anti-m6A	Synaptic Systems	202 003
anti-KLF9	ABclonal	A7196
anti- α -Tubulin	Abclonal	AC012
anti-ACTB	Proteintech	66009-1-Ig