SUPPLEMENT

Sixty Yanbian yellow steers raised in the Jilin Province Hunchun Animal Husbandry to the age of approximately 30 months were used in the study. All test cattle were fattened under the same feeding conditions until slaughter. Immediately after slaughter, samples of the longissimus dorsi muscle tissue were obtained. Based on the marbling pattern, three individuals each with a relatively high or low marbling grade were selected and assigned to the high- and low-fat groups, respectively. miRNA-Seq and RNA-Seq were conducted, and genes with differential expression were identified. The experimental procedures were approved by the Yanbian University Animal Care and Use Committee.

Table S1. miRNA sequence

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bta-miR-1271 mimics (double-strand)	5′-CUUGGCACCUAGUAAGUACUCA-3′
	5′-AGUACUUACUAGGUGCCAAGUU-3′
Mimics NC (double-strand)	5′-UUCUCCGAACGUGUCACGUTT-3′
	5′-ACGUGACACGUUCGGAGAATT-3′
bta-miR-1271 inhibitor	5′-UGAGUACUUACUAGGUGCCAAG-3′
Inhibitor NC	5′-CAGUACUUUUGUGUAGUACAA-3′

Table S2. Primers targeting the seed region of the candidate target gene *ATF3*

Primer name	Primer sequence (5′-3′)
ATF3-WT-F	CATGGAGCTCCGACACTGCTGTGACTTTT
ATF3-WT-R	CAGTCTAGAGCTTTCTTCCTGTGACCTT
ATF3-MUT-F	TTTGGATCAACAGAAAAGATGTCTTCCGC
ATF3-MUT-R	TTTCTGTTGATCCAAAACTGCACTCAGCGCTG

Note. The underlined nucleotides represent enzyme cutting sites.

Table S3. Primers used for qRT-PCR analysis

Primer name	GenBank accession No.	Primer sequence (5′-3′)
ATF3-F	NM_001046193.2	AAAGCAGAAACACGAGTCCA
ATF3-R		AATGTGGTTTTCAATCGCAAG
PPARγ-F	NM_181024.2	CGAGAAGGAGAAGCTGTTGG
PPARγ-R		TCAGCGGGAAGGACTTTATG
C/EBPα-F	NM_176784.2	TGGACAAGAACAGCAACGAG
C/EBPα-R		TCACTGGTCAACTCCAGCAC
β-Actin-F	NM_173979.3	AGGCATCCTGACCCTCAAGTA
β-Actin-R		GCTCGTTGTAGAAGGTGTGGT
bta-miR-1271	MIMAT0009975	CTTGGCACCTAGTAAGTACTCA
bta-let-7a	MIMAT0003844	CGGTGAGGTAGTAGGGTTGTATAGTT
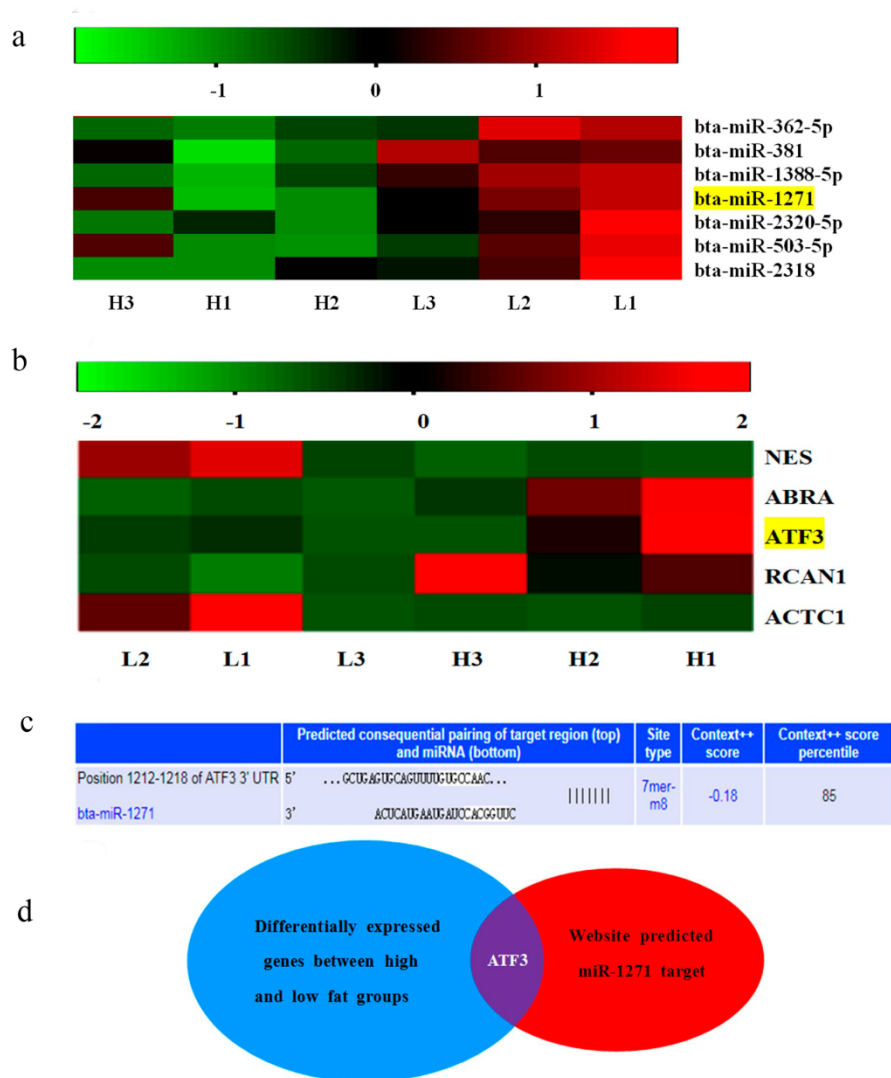
Fig. S1. ATF3 is a candidate target gene of bta-miR-1271. a and b) miRNA-seq and RNA-seq analyze in longissimus dorsi muscle of Yanbian yellow cattle with high-fat groups (H1, H2, H3) and low-fat groups (L1, L2, L3). Data here is not fully shown. c) TargetScan prediction result. d) ATF3 coexists in both results.