

**Table S6.** Information about differentially expressed types of RNAs and their interactions in subnets of ceRNA regulatory network between eight pairwise comparative groups associated with IMF in beef cattle breeds.

Subnets	Important Interactions				Types of Hub RNAs		
					mRNAs	miRNAs	lncRNAs
					Down/Up Regulation (↓↑)	Down/Up Regulation (↓↑)	Down/Up Regulation (↓↑)
1	mRNA-miRNA	bta-miR-1-2	Suppressed	UTRN, ACTB, ASH1L, NRP1, THBS1	(↓) UTRN, ATP2A2, CTNND1, MYOZ1, CKM, LMOD2, BAG3	(↓) bta-miR-1-2	(NA) MSTRG.10337
	mRNA-lncRNA	LOC512486	Interacted with	IRF1			
		MSTRG.2819	Interacted with	MYPN			
		MSTRG.10337	Interacted with	RYR1, CASQ1, MYBPC1, TNNT1, CACNA1S, CKM, LMOD2, CORO6, MB, MYOM2, LDB3			
	lncRNA-lncRNA	MSTRG.10337	Interacted with	MSTRG.2819, MSTRG.5283, MSTRG.8140, MSTRG.8974, MSTRG.8142, MSTRG.7965	(↑) EHBP1L1		
2	mRNA-miRNA	bta-miR-1-2	Suppressed	UTRN, THBS1, ASH1L HNRNPA1, NRP1, ACTB, FN1	(↓) UTRN, MYOZ1, RYR1, LMOD2, CKM	(↓) bta-miR-1-2	(NA) MSTRG.10337
		bta-miR-133a-1, bta-miR-133a-2	Suppressed	MSN			
	mRNA-lncRNA	MSTRG.10337	Interacted with	LMOD2, MYOM2, LDB3, RYR1, NEB, MYBPC1, TNNC2, MYL2, CORO6, CKM, MB, TNNT1, FBXO40			
		LOC526226, LOC101903367, LOC112444238, LOC525506, LOC525506	Interacted with	MEF2C, IGF2			
		BIANCR	Interacted with	S100B, HSPA1A, ACTR3B, HADHB			
	3	mRNA-miRNA	bta-miR-1-2	Suppressed	UTRN, THBS1, ASH1L HNRNPA1, NRP1, ACTB, FN1		
bta-miR-95			Suppressed	ACACB, ENAH, IPO5, XPO4, LPIN1			
bta-miR-365-1			Suppressed	PTGFRN, CCNG1, ASH1L, BRWD1, SARS, UBR3, YWHAG, CLUH, PKIA, EIF4EBP2, HSPB8, NOTCH3, ADCY9, VAPA, ATP1A2, IPO5, ENAH, CD180, ACACB, EHD3, ARHGAP35, PPP1R2, BCL2L13, CD38, CD74, TAL1, ACP5, DST, APC			
mRNA-lncRNA		BIANCR	Interacted with	ACTR3B, MAP3K11, NDRG2, LPIN1	(↑) EHBP1L1		

4	mRNA-miRNA	bta-miR-133a-2, bta-miR-133a-1	Suppressed	ASH1L, XPO4	<p>(↓) GLUL, BRWD1, ASH1L, VAPS13D, BIRC6, VAPS13C, WDFY3</p>		
		bta-miR-95	Suppressed	IPO5, ABLIM1			
		bta-miR-1-2	Suppressed	KCNJ2, HIPK3			
		bta-miR-378d	Suppressed	CYB5R1, FYTDD1, AFF1, FXR1, NCKAP1, CLUH, MORF4L2, CHTA, PDE4D, VAPA, RTN2, MAPRE3, HIPK3, KCNJ2, PRR5L, TMEM151A, WARS, SDS, CLIC5, GSTM4, DPYSL3, DPYSL3, FBXO40			
		bta-miR-1296	Suppressed	TNNI1, C3, ABLIM1, WNK1, ADCY9, ZNF106, VPS13C, PKIA, CARM1, EIF4EBP2, AOC3			
	mRNA-circRNA	circRNA5689, circRNA5807, circRNA5797, circRNA5755	Interacted with	GLUL			
	mRNA-lncRNA	MSTRG.3939.1, MSTRG.21819.1, MSTRG.3767.1, MSTRG.20646.1, MSTRG.20716.2, MSTRG.19454.1, MSTRG.7800.1, MSTRG.14115.1, MSTRG.10285.2, MSTRG.19644.1, MSTRG.5117.1, MSTRG.5458.1, MSTRG.11792.1, MSTRG.16187.2, MSTRG.10293.1, MSTRG.10451.1, MSTRG.18715.1, MSTRG.16614.1, MSTRG.22368.1, MSTRG.6618.1, MSTRG.20293.2, MSTRG.22366.1, MSTRG.7874.1, MSTRG.12913.1, MSTRG.20966.1, MSTRG.22369.1, MSTRG.9461.1, MSTRG.16045.1, MSTRG.8171.1, MSTRG.7718.1, BIANCR	Interacted with	GLUL			
		BIANCR	Interacted with	S100B			
	miRNA-circRNA	bta_circ_0004158, bta_circ_0006814, bta_circ_0006815, bta_circ_0006807, bta_circ_0006152, bta_circ_0008914, bta_circ_0008835, bta_circ_0006806, bta_circ_0006813	Interacted with	bta-miR-378d			
						<p>(↓) bta-miR-1296, bta-miR-378d</p>	<p>(NA) BIANCR</p>

		bta_circ_0006812, bta_circ_0010653, bta_circ_0003169	Interacted with	bta-miR-1296			
5 and 6	mRNA-miRNA	bta-miR-133a-2, bta-miR-133a-1, bta-miR-1-2	Suppressed	ASH1L	(↓) BRWD1, ASH1L, VAPS13D, BIRC6, VAPS13C, WDFY3	(↓) bta-miR-1296	-
		bta-miR-1296	Suppressed	CD180, ABLIM1, RABEP1, EIF4EBP2, TNNI1, AOC3, C3, WNK1, ADCY9, EHD3, PKIA, CARM1, ZNF106, CSDE1			
	miRNA-circRNA	bta_circ_0010653, bta_circ_0003169	Interacted with	bta-miR-1296			
7	mRNA-miRNA	bta-miR-378d	Suppressed	RTN2, DPYSL3, PDE4D, KCNJ2, CYB5R1, GSTM4, FYTTD1, CLIC5, MORF4L2, EHD3, CD180, PRR5L, TMEM151A, CLUH, AFF1, CIITA, VAPA	(↓) RTN2	(↓) bta-miR-378d	-
	miRNA-circRNA	bta-miR-378d	Interacted with	bta_circ_0006813, bta_circ_0006814, bta_circ_0008835, bta_circ_0006815, bta_circ_0004158, bta_circ_0006812, bta_circ_0006152, bta_circ_0006807, bta_circ_0006806, bta_circ_0008914			