

Table S5. Top 20 significantly enriched gene ontology (GO) terms in each category during peak and late lactation.

Category	ID	Term	P-value	Gene Name	Number of Genes
cellular component	GO:0034719	SMN-Sm protein complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPD2, SMN2, SNRPG, SNRPD1</i>	7
cellular component	GO:0097525	spliceosomal snRNP complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPA, SNRPD2, SNRPG, SNRPC, SNRPD1</i>	8
cellular component	GO:0034708	methyltransferase complex	< 0.001	<i>SNRPE, RUVBL2, SNRPB, SNRPF, SNRPD2, WDR77, PRMT5, SNRPG, SNRPD1</i>	9
cellular component	GO:0030532	small nuclear ribonucleoprotein complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPA, SNRPD2, SNRPG, SNRPC, SNRPD1</i>	8
cellular component	GO:0120114	Sm-like protein family complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPA, SNRPD2, SMN2, SNRPG, SNRPC, SNRPD1</i>	9
cellular component	GO:0046540	U4/U6 x U5 tri-snRNP complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPD2, SNRPG, SNRPD1</i>	6
cellular component	GO:0097526	spliceosomal tri-snRNP complex	< 0.001	<i>SNRPE, SNRPB, SNRPF, SNRPD2, SNRPG, SNRPD1</i>	6
cellular component	GO:0005839	proteasome core complex	0.001	<i>PSMB9, PSMA4, PSMA5, PSMA3, PSMA1, PSMB10, PSMB8</i>	7
cellular component	GO:0044421	extracellular region part	0.001	<i>BPIFA1, BPIFB1, PRSS2, IL6, MMP9, SERPINF2, TGFB2, SERPINA3-1, DEFB1, ANGPTL4, CHI3L1, IL18, THBS4, PGK1, LBP, CXCL17, TNF, SCNN1A, IL1B, IL34, BSP5, ANGPT1, CCL3, CD9, MFAP2, PTGDS, CMTM8, ANXA2, FBLN5, MMP2, IGFBP2, RETN, LY96, FAP, DCN, ANGPTL1, CNP, TCN2, CRELD2, FGG, CLIC1, MFAP5, LUM, LTF, MYOC, CRISPLD2, CLU, PTN, APOD, CSN1S2</i>	50
cellular component	GO:0005615	extracellular space	0.001	<i>BPIFA1, BPIFB1, PRSS2, IL6, MMP9, SERPINF2, TGFB2, SERPINA3-1, ANGPTL4, CHI3L1, IL18, THBS4, PGK1, LBP, CXCL17, TNF, SCNN1A, IL1B, IL34, BSP5, ANGPT1, CCL3, CD9, PTGDS, CMTM8, FBLN5, IGFBP2, RETN, LY96, FAP, ANGPTL1, CNP, TCN2, CRELD2, FGG, CLIC1, LTF, MYOC, CLU, PTN, APOD, CSN1S2</i>	42
cellular component	GO:0071007	U2-type catalytic step 2 spliceosome	0.002	<i>SNRPE, SNRPB, SNRPF, SNRPD2, SNRPG, SNRPD1</i>	6
cellular component	GO:0031226	intrinsic component of plasma membrane	0.006	<i>IL6, SLC1A1, RHBG, CD40, SLC1A3, SLC6A6, TNF, SCNN1A, SLC16A1, SLC26A2, HCRTR1, NCF1, FCER1G, SLC8A1, LY96, SLC2A5, C7, SCARA5, RAB26, PLAUR, STRA6, SELL, FOLR3, SLC6A4, S1PR1, CLSTN3, NPR2</i>	27
cellular component	GO:0034399	nuclear periphery	0.006	<i>PHB2, NUP93, EIF6, UHRF1, TP53, PCNA, MAPT, KRT8</i>	8
cellular component	GO:0071005	U2-type precatalytic spliceosome	0.007	<i>SNRPE, SNRPB, SNRPF, SF3B5, SNRPD2, SNRPG, SNRPD1</i>	7
cellular component	GO:0071011	precatalytic spliceosome	0.007	<i>SNRPE, SNRPB, SNRPF, SF3B5, SNRPD2, SNRPG, SNRPD1</i>	7
cellular component	GO:0042470	melanosome	0.007	<i>HSP90AB1, HSP90AA1, CCT4, PDIA3, HSP90B1, ANXA2, SERPINF1, AHCY, PDIA4, CTNS, CNP, FASN</i>	12
cellular component	GO:0048770	pigment granule	0.007	<i>HSP90AB1, HSP90AA1, CCT4, PDIA3, HSP90B1, ANXA2, SERPINF1, AHCY, PDIA4, CTNS, CNP, FASN</i>	12
cellular component	GO:0031012	extracellular matrix	0.011	<i>MMP9, TGFB2, THBS4, MFAP2, ANXA2, FBLN5, MMP2, DCN, MFAP5, LUM, MYOC, CRISPLD2, CLU</i>	13
cellular component	GO:0009986	cell surface	0.012	<i>SERPINF2, TYROBP, CD40, SLC1A3, TNF, CD9, CD99L2, GOT2, FAP, SCARA5, NRR0S, PLAUR, MXRA8, ENPP3, FOLR3, LTF, S1PR1, ADRA2B</i>	18
cellular component	GO:0043230	extracellular organelle	0.018	<i>DEFB1, SCNN1A, IL1B, CD9, ANXA2, CLIC1, MYOC</i>	7

molecular function	GO:0005102	signaling receptor binding	< 0.001	CCL20, S100A9, IL6, IL1RN, DOK2, TGFB2, DEFB1, C1QBP, S100A12, PPID, CXCL5, RND1, IL18, THBS4, CXCL2, TNF, S100A8, IL1B, SYT1, TUBB, IL34, FAM49B, ANGPT1, ANGPT4, SPG21, RASL11B, CCL3, RAPGEF2, HSP90B1, CD9, CMTM8, SPADH1, MIA, TP53, CCL5, S100A14, SPP1, PCNA, FBLN5, CXCL8, TGFBI, RETN, LY96, MAPT, FAP, PLAUR, ANGPTL1, FGG, MANF, FERMT3, OGN, LTF, S1PR1, PTN, PPARG	55
molecular function	GO:0042379	chemokine receptor binding	< 0.001	CCL20, DEFB1, CXCL5, CCL3, CCL5, S100A14, CXCL8	7
molecular function	GO:0005126	cytokine receptor binding	0.001	CCL20, IL6, IL1RN, TGFB2, DEFB1, CXCL5, IL18, TNF, IL34, RASL11B, CCL3, CCL5, S100A14, CXCL8	14
molecular function	GO:0004298	threonine-type endopeptidase activity	0.001	PSMB9, PSMA4, PSMA5, PSMA3, PSMA1, PSMB10, PSMB8	7
molecular function	GO:0070003	threonine-type peptidase activity	0.001	PSMB9, PSMA4, PSMA5, PSMA3, PSMA1, PSMB10, PSMB8	7
molecular function	GO:0005178	integrin binding	0.002	THBS4, IL1B, CD9, FBLN5, TGFBI, FAP, FERMT3	7
molecular function	GO:0005125	cytokine activity	0.009	IL6, IL1RN, CXCL5, IL18, TNF, IL1B, IL34, CCL3, CMTM8, SPP1	10
molecular function	GO:0030971	receptor tyrosine kinase binding	0.009	DOK2, ANGPT1, ANGPT4, TP53, PCNA	5
molecular function	GO:0030246	carbohydrate binding	0.010	LGALS4, CLEC6A, FBXO2, OLR1, CHI3L1, CALR, FCN1, GALM, SLC2A5, COLEC12, ENPP3, SBSPON, SELL, FBP1	14
molecular function	GO:0050839	cell adhesion molecule binding	0.010	THBS4, IL1B, CD9, CXADR, FBLN5, TGFBI, FAP, FERMT3	8
molecular function	GO:0051287	NAD binding	0.015	UGDH, ALDH2, IDH3A, AHCY, ALDH1A1, GPD1	6
molecular function	GO:0016835	carbon-oxygen lyase activity	0.015	ENOSF1, TPI1, ENO1, APEX1, CA6, PCBD1, FASN, CA4	8
molecular function	GO:1990782	protein tyrosine kinase binding	0.018	DOK2, ANGPT1, ANGPT4, TP53, PCNA	5
molecular function	GO:0003714	transcription corepressor activity	0.018	C1QBP, CRYM, BASP1, PBXIP1, PRMT5, CITED2, BHLHE40	7
molecular function	GO:0019904	protein domain specific binding	0.020	HSP90AB1, HSP90AA1, FOXA3, CHAF1A, ETV6, PYCARD, BASP1, SCNN1A, RAPGEF2, GNG5, NCF1, TP53, CXADR, HEYL, CCT6A, SH3BGRL2, MAPT, PLAUR, PPARG, BHLHE40	20
molecular function	GO:0004930	G protein-coupled receptor activity	0.021	PROKR2, CXCR1, GPR37L1, HCRTR1, TBXA2R, F2R, GPR68, ADCYAP1R1, ACKR1, AGTR1, PTGDR, F2RL1, S1PR1, ADRA2B	14
molecular function	GO:0001653	peptide receptor activity	0.022	PROKR2, CXCR1, GPR37L1, HCRTR1, F2R, AGTR1, F2RL1, NPR2	8
molecular function	GO:0016836	hydro-lyase activity	0.026	ENOSF1, ENO1, CA6, PCBD1, FASN, CA4	6
molecular function	GO:0016829	lyase activity	0.029	DDC, SDS, MOCOS, ENOSF1, TPI1, ENO1, APEX1, MOCS1, CA6, PCBD1, ECHDC1, FASN, CA4, NPR2	14
molecular function	GO:0001664	G protein-coupled receptor binding	0.031	CCL20, DEFB1, C1QBP, CXCL5, CCL3, RAPGEF2, CCL5, S100A14, CXCL8, S1PR1	10