

miRNA	KEGG ID	KEGG e-value	gene symbol	Target gene ID	Orthology	KEGG pathway	GO term accession	GO term name	GO domain	GO term definition
gmo-miR-181a	K04433	4,4319 E-141	map2k6	ENSGMOG0000000036		ko04010 MAPK signaling pathway	GO:0003674	ko04010 MAPK signaling pathway		
gmo-miR-146	K10847	5,9395 E-118	xpa	ENSGMOG0000000063	ENSDARG0000038114	ko03420 Nucleotide excision repair	GO:0003677	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA (deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]
gmo-miR-19a			Cnp	ENSGMOG0000000075	ENSDARG0000070822		GO:0004113			
gmo-miR-130b			Cnp	ENSGMOG0000000075	ENSDARG0000070822		GO:0004113			
gmo-miR-181a	K12796	1,5187 E-17	Lrrc28	ENSGMOG0000000175	ENSDARG0000057477	ko04621 NOD-like receptor signaling pathway		ko04621 NOD-like receptor signaling pathway		
gmo-miR-19a			TMEM87A	ENSGMOG0000000308	ENSG00000103978		GO:0016021			
gmo-miR-19a	K08062	4,3267 8E-76	ANKRA2	ENSGMOG0000000317	ENSDARG0000035399	ko04612 Antigen processing and presentation	GO:0005515	ko04612 Antigen processing and presentation		
gmo-miR-206			pald	ENSGMOG0000000321	ENSDARG0000039352					
gmo-miR-206	K00602	0	ATIC	ENSGMOG0000000421	ENSDARG0000016706	ko01100 Metabolic pathways	GO:0003937	IMP cyclohydrolase activity	MF	Catalysis of the reaction: IMP + H2O = 5-formamido-1-(5-phosphoribosyl)imidazole-4-carboxamide." [EC:3.5.4.10],IEA,MF ENSGMOT00000000441, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene

										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K12796	2,4099 2E-22	LRRC2	ENSGMOG0 0000000426	ENSDARG00 000087624	ko04621 NOD-like receptor signaling pathway		ko04621 NOD- like receptor signaling pathway		
gmo-miR-206	K01388	1,3895 7E-26	MMP23A	ENSGMOG0 0000000435	ENSDARG00 000043079	ko03320 PPAR signaling pathway	GO:00042 22	metalloendope ptidase activity	MF	Catalysis of the hydrolysis of internal, alpha- peptide bonds in a polypeptide chain by a mechanism in which water acts as a nucleophile, one or two metal ions hold the water molecule in place, and charged amino acid side chains are ligands for the metal ions. [GOC:mah, <a href="http://merops.sanger.ac.uk/about/glossary.htm#CATYPE">http://merops.sanger.ac.uk/about/glossary.htm#C ATYPE</a> , <a href="http://merops.sanger.ac.uk/about/glossary.htm#ENDOPEPTIDASE">http://merops.sanger.ac.uk/about/glossary.htm#E NDOPEPTIDASE</a> ]
gmo-miR- 11240	K13764	4,8555 8E-33	KCNIP1	ENSGMOG0 0000000472	ENSDARG00 000034808	ko04744 Phototransduction	GO:00431 67	ion binding	MF	Interacting selectively and non-covalently with ions, charged atoms or groups of atoms. [GOC:jl]
gmo-miR-9	K12192	2,3524 E-103	CHMP2B	ENSGMOG0 0000000475	ENSDARG00 000068683	ko04144 Endocytosis	GO:00070 34	vacuolar transport	BF	The directed movement of substances into, out of or within a vacuole. [GOC:ai]
gmo-miR-206	K06087	1,3152 E-18	CLDN8	ENSGMOG0 0000000672	ENSXMAG0 0000019840	ko04530 Tight junction	GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-206	K06067	1,5523 E-06	HDAC5	ENSGMOG0 0000000748	ENSDARG00 000075139	ko04110 Cell cycle	GO:00044 07	histone deacetylase activity	MF	Catalysis of the reaction: histone N6-acetyl-L- lysine + H2O = histone L-lysine + acetate. This reaction represents the removal of an acetyl group from a histone, a class of proteins

										complexed to DNA in chromatin and chromosomes. [EC:3.5.1.-, PMID:9893272]
gmo-miR-181a	K10652	2,9224 9E-08	LONRF2	ENSGMOG0 0000000799	ENSDARG00 000089138	ko04064 NF-kappa B signaling pathway	GO:00055 15	ko04064 NF- kappa B signaling pathway		
gmo-miR-181a	K06092	3,0269 6E-09	SNTA1	ENSGMOG0 0000000801	ENSDARG00 000090781	ko04390 Hippo signaling pathway	GO:00055 15	ko04390 Hippo signaling pathway		
gmo-miR- 11240			TMEM22 2	ENSGMOG0 0000000961	ENSDARG00 000069589					
gmo-miR-146	K04459	5,8141 E-139	Dusp2	ENSGMOG0 0000000967	ENSDARG00 000036572	ko04010 MAPK signaling pathway	GO:00081 38	protein tyrosine/serine /threonine phosphatase activity	MF	Catalysis of the reactions: protein serine + H2O = protein serine + phosphate; protein threonine phosphate + H2O = protein threonine + phosphate; and protein tyrosine phosphate + H2O = protein tyrosine + phosphate." [GOC:mah],IEA,MF ENSGMOG00000000967,ENSGMOT00000001026, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K00012	0	UGDH	ENSGMOG0 0000001036	ENSDARG00 000019838	ko01100 Metabolic pathways	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a			Erh	ENSGMOG0 0000001125	ENSDARG00 000032866		GO:00070 49			
gmo-miR-19a	K15730	6,3282 4E-92	PTGES3	ENSGMOG0 0000001184	ENSDARG00 000058831	ko01100 Metabolic pathways		ko01100 Metabolic pathways		

gmo-miR-9	K07199	4,5937 E-148	Prkab1	ENSGMOG0 0000001403	ENSDARG00 000044183	ko04068 FoxO signaling pathway	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000001403,ENSGMOT00000001519, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a			REEP5	ENSGMOG0 0000001465	ENSDARG00 000052661					
gmo-miR-130b			REEP5	ENSGMOG0 0000001465	ENSDARG00 000052661					
gmo-miR-192	K07297	0	ADIPOR1	ENSGMOG0 0000001524	ENSDARG00 000002912	ko04152 AMPK signaling pathway	GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-181a			FAM60A	ENSGMOG0 0000001596	ENSDARG00 000078118					
gmo-miR-130b	K03260	0,0001 09896	cdca8	ENSGMOG0 0000001665	ENSDARG00 000043137	ko03013 RNA transport		ko03013 RNA transport		
gmo-miR-130b	K05018	1,5936 4E-13	CLCN6	ENSGMOG0 0000001687	ENSDARG00 000032577	ko04966 Collecting duct acid secretion	GO:00052 47	voltage-gated chloride channel activity	MF	Catalysis of the transmembrane transfer of a chloride ion by a voltage-gated channel. A voltage-gated channel is a channel whose open state is dependent on the voltage across the membrane in which it is embedded. [GOC:mtg_transport, ISBN:0815340729]

gmo-miR-146	K05018	1,5936 4E-13	CLCN6	ENSGMOG0 0000001687	ENSDARG00 000032577	ko04966 Collecting duct acid secretion	GO:00052 47	voltage-gated chloride channel activity	MF	Catalysis of the transmembrane transfer of a chloride ion by a voltage-gated channel. A voltage-gated channel is a channel whose open state is dependent on the voltage across the membrane in which it is embedded. [GOC:mtg_transport, ISBN:0815340729]
gmo-miR-181a	K00558	2,7593 4E-11	PWWP2B	ENSGMOG0 0000001770	ENSDARG00 000073817	ko01100 Metabolic pathways		ko01100 Metabolic pathways		
gmo-miR-181a			Tmbim4	ENSGMOG0 0000001863	ENSDARG00 000014361					
gmo-miR-192	K10500	4,1962 8E-33	ZNF362	ENSGMOG0 0000001892	ENSDARG00 000060900	ko04110 Cell cycle	GO:00468 72	metal ion binding	MF	Interacting selectively and non-covalently with any metal ion." [GOC:ai],IEA,MF ENSGMOG00000001892,ENSGMOT00000002074, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K09508	1,1580 2E-82	DNAJB2	ENSGMOG0 0000001949	ENSDARG00 000058644	ko04141 Protein processing in endoplasmic reticulum		ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-181a	K05692	2,5547 E-78	ACTR3	ENSGMOG0 0000002043	ENSDARG00 000091138	ko04510 Focal adhesion		ko04510 Focal adhesion		
gmo-miR-9	K04608	0	Grm8	ENSGMOG0 0000002146	ENSDARG00 000076508	ko04724 Glutamatergic synapse	GO:00049 30	G-protein coupled receptor activity	MF	Combining with an extracellular signal and transmitting the signal across the membrane by activating an associated G-protein; promotes the exchange of GDP for GTP on the alpha subunit of a heterotrimeric G-protein complex. [GOC:bf, <a href="http://www.iuphar-db.org">http://www.iuphar-db.org</a> , Wikipedia:GPCR]

gmo-miR-130b	K05190	0	Gabrr3	ENSGMOG0000002156	ENSDARG0000027153	ko04080 Neuroactive ligand-receptor interaction	GO:0006810	ko04080 Neuroactive ligand-receptor interaction		
gmo-miR-19a			esco2	ENSGMOG0000002234	ENSDARG0000014685		GO:0000278			
gmo-miR-9	K04358	1,1936 2E-98	fgf4-b	ENSGMOG0000002238	ENSDARG0000068095	ko04010 MAPK signaling pathway	GO:0008083	growth factor activity	MF	The function that stimulates a cell to grow or proliferate. Most growth factors have other actions besides the induction of cell growth or proliferation." [ISBN:0815316194],IEA,MF ENSGMOT00000002456,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K04358	1,1936 2E-98	fgf4-b	ENSGMOG0000002238	ENSDARG0000068095	ko04010 MAPK signaling pathway	GO:0008083	growth factor activity	MF	The function that stimulates a cell to grow or proliferate. Most growth factors have other actions besides the induction of cell growth or proliferation." [ISBN:0815316194],IEA,MF ENSGMOT00000002456,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K09341	2,5797 3E-19	dlx1a	ENSGMOG0000002250	ENSDARG0000013125		GO:0003677	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA (deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]
gmo-miR-130b	K14685	0	slc40a1	ENSGMOG0000002288	ENSDARG0000000241	ko04978 Mineral absorption	GO:0005381	ko04978 Mineral absorption		

gmo-miR-146	K14404	2,8257 E-172	cpsf4	ENSGMOG0 0000002330	ENSDARG00 000020217	ko03015 mRNA surveillance pathway	GO:00468 72	metal ion binding	MF	Interacting selectively and non-covalently with any metal ion." [GOC:ai],IEA,MF ENSGMOG00000002330,ENSGMOT00000002555, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K05731	0,0027 262	tmem17 0a	ENSGMOG0 0000002331	ENSDARG00 000056628	ko04015 Rap1 signaling pathway				
gmo-miR-19a	K13758	1,1402 3E-06	UNC119	ENSGMOG0 0000002332	ENSDARG00 000034453	ko00230 Purine metabolism		ko00230 Purine metabolism		
gmo-miR-206	K10858	0,0005 43127	KIAA051 3	ENSGMOG0 0000002337	ENSDARG00 000041599	ko03430 Mismatch repair				
gmo-miR-181a	K03729	4,5097 E-128	BHLHE40	ENSGMOG0 0000002353	ENSDARG00 000004060	ko04710 Circadian rhythm	GO:00036 77	ko04710 Circadian rhythm		
gmo-miR-181a	K13126	0	Pabpc1	ENSGMOG0 0000002448	ENSDARG00 000021140	ko03013 RNA transport	GO:00036 76	nucleic acid binding	MF	Interacting selectively and non-covalently with any nucleic acid." [GOC:jl],IEA,MF ENSGMOG00000002448,ENSGMOT00000002689, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K13126	0	Pabpc1	ENSGMOG0 0000002448	ENSDARG00 000021140	ko03013 RNA transport	GO:00036 76	nucleic acid binding	MF	Interacting selectively and non-covalently with any nucleic acid." [GOC:jl],IEA,MF ENSGMOG00000002448,ENSGMOT00000002689, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-206	K10456	2,2513 7E-93	KLHL8	ENSGMOG0 0000002584	ENSDARG00 000015344	ko04120 Ubiquitin mediated proteolysis	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000002584,ENSGMOT00000002817, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9			SLITRK5	ENSGMOG0 0000002657	ENSDARG00 000074153					
gmo-miR-19a			SLITRK5	ENSGMOG0 0000002657	ENSDARG00 000074153					
gmo-miR-181a	K04459	3,8060 6E-05	CCDC120	ENSGMOG0 0000002686	ENSDARG00 000032856	ko04010 MAPK signaling pathway		ko04010 MAPK signaling pathway		
gmo-miR-9	K00591	7,3680 9E-06	METTL7A	ENSGMOG0 0000002688	ENSDARG00 000028478	ko01100 Metabolic pathways	GO:00081 68	methyltransfer ase activity	MF	Catalysis of the transfer of a methyl group to an acceptor molecule." [ISBN:0198506732],IEA,MF ENSGMOG00000002688,ENSGMOT00000002911, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K11828	0	dlg4	ENSGMOG0 0000002859	ENSDARG00 000041926	ko04390 Hippo signaling pathway	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000002859,ENSGMOT00000003130, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene



										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-11240	K11828	0	dlg4	ENSGMOG0000002859	ENSDARG0000041926	ko04390 Hippo signaling pathway	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG0000002859,ENSGMOT00000003130,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K02580	1,1054 E-13	Osbpl1a	ENSGMOG0000003066	ENSDARG0000053746	ko04010 MAPK signaling pathway	GO:0005515	ko04010 MAPK signaling pathway		
gmo-miR-9	K00591	0,0063 9172	Mepce	ENSGMOG0000003093	ENSDARG0000059461	ko01100 Metabolic pathways	GO:0008168	methyltransferase activity	MF	Catalysis of the transfer of a methyl group to an acceptor molecule." [ISBN:0198506732],IEA,MF ENSGMOG00000003093,ENSGMOT00000003380,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K00591	0,0063 9172	Mepce	ENSGMOG0000003093	ENSDARG0000059461	ko01100 Metabolic pathways	GO:0008168	methyltransferase activity	MF	Catalysis of the transfer of a methyl group to an acceptor molecule." [ISBN:0198506732],IEA,MF ENSGMOG00000003093,ENSGMOT00000003380,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-192	K00591	0,0063 9172	Mepce	ENSGMOG0 0000003093	ENSDARG00 000059461	ko01100 Metabolic pathways	GO:00081 68	methyltransferase activity	MF	Catalysis of the transfer of a methyl group to an acceptor molecule." [ISBN:0198506732],IEA,MF ENSGMOG00000003093,ENSGMOT00000003380, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K13347	2,2307 1E-86	PXMP2	ENSGMOG0 0000003113	ENSDARG00 000003144	ko04146 Peroxisome	GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-9	K08187	5,4211 9E-30	SLC16A7	ENSGMOG0 0000003237	ENSDARG00 000074923	ko04919 Thyroid hormone signaling pathway	GO:00550 85	transmembrane transport	BF	The process in which a solute is transported from one side of a membrane to the other. [GOC:dph, GOC:jid]
gmo-miR-11240	K08187	5,4211 9E-30	SLC16A7	ENSGMOG0 0000003237	ENSDARG00 000074923	ko04919 Thyroid hormone signaling pathway	GO:00550 85	transmembrane transport	BF	The process in which a solute is transported from one side of a membrane to the other. [GOC:dph, GOC:jid]
gmo-miR-181a	K05746	0,0089 2355	tmem41aa	ENSGMOG0 0000003318	ENSDARG00 000070028	ko04810 Regulation of actin cytoskeleton	GO:00160 21	ko04810 Regulation of actin cytoskeleton		
gmo-miR-181a	K12479	0,0012 4555	vps33b	ENSGMOG0 0000003457	ENSDARG00 000044813	ko04144 Endocytosis	GO:00069 04	ko04144 Endocytosis		
gmo-miR-19a	K04684	1,0802 6E-35	Klf11	ENSGMOG0 0000003463	ENSDARG00 000030844	ko04915 Estrogen signaling pathway	GO:00468 72	ko04915 Estrogen signaling pathway		

gmo-miR-19a	K07373	1,2501 E-103	nl BL_O RD_ID 7 7572	ENSGMOG0 0000003494	ENSDARG00 000035340	ko04540 Gap junction	GO:00071 54	ko04540 Gap junction		
gmo-miR-181a	K04498	0,0070 4555	Slmo2	ENSGMOG0 0000003518	ENSG00000 101166	ko04024 cAMP signaling pathway		ko04024 cAMP signaling pathway		
gmo-miR-19a			LGALS8	ENSGMOG0 0000003532	ENSDARG00 000037066		GO:00302 46	carbohydrate binding	MF	Interacting selectively and non-covalently with any carbohydrate, which includes monosaccharides, oligosaccharides and polysaccharides as well as substances derived from monosaccharides by reduction of the carbonyl group (alditols), by oxidation of one or more hydroxy groups to afford the corresponding aldehydes, ketones, or carboxylic acids, or by replacement of one or more hydroxy group(s) by a hydrogen atom. Cyclitols are generally not regarded as carbohydrates. [CHEBI:16646, GOC:mah]
gmo-miR-130b			LGALS8	ENSGMOG0 0000003532	ENSDARG00 000037066		GO:00302 46	carbohydrate binding	MF	Interacting selectively and non-covalently with any carbohydrate, which includes monosaccharides, oligosaccharides and polysaccharides as well as substances derived from monosaccharides by reduction of the carbonyl group (alditols), by oxidation of one or more hydroxy groups to afford the corresponding aldehydes, ketones, or carboxylic acids, or by replacement of one or more hydroxy group(s) by a hydrogen atom. Cyclitols are generally not regarded as carbohydrates. [CHEBI:16646, GOC:mah]
gmo-miR-206			LGALS8	ENSGMOG0 0000003532	ENSDARG00 000037066		GO:00302 46	carbohydrate binding	MF	Interacting selectively and non-covalently with any carbohydrate, which includes monosaccharides, oligosaccharides and polysaccharides as well as substances derived from monosaccharides by reduction of the carbonyl group (alditols), by

										oxidation of one or more hydroxy groups to afford the corresponding aldehydes, ketones, or carboxylic acids, or by replacement of one or more hydroxy group(s) by a hydrogen atom. Cyclitols are generally not regarded as carbohydrates. [CHEBI:16646, GOC:mah]
gmo-miR-206	K05767	0	IQGAP1	ENSGMOG0000003631	ENSDARG0000078888	ko04810 Regulation of actin cytoskeleton	GO:0005099	Ras GTPase activator activity	BF	Increases the rate of GTP hydrolysis by a GTPase of the Ras superfamily." [GOC:mah],IEA,MF ENSGMOG0000003631,ENSGMOT0000004030, GO:0030234,enzyme regulator activity,"Binds to and modulates the activity of an enzyme." [GOC:mah],IEA,MF ENSGMOG0000003631,ENSGMOT0000004030, GO:0007264,small GTPase mediated signal transduction,"Any series of molecular signals in which a small monomeric GTPase relays one or more of the signals." [GOC:mah],IEA,BF ENSGMOG0000003631,ENSGMOT0000004030, GO:0007165,signal transduction,"The cellular process in which a signal is conveyed to trigger a change in the activity or state of a cell. Signal transduction begins with reception of a signal (e.g. a ligand binding to a receptor or receptor activation by a stimulus such as light), or for signal transduction in the absence of ligand, signal-withdrawal or the activity of a constitutively active receptor. Signal transduction ends with regulation of a downstream cellular process, e.g. regulation of transcription or regulation of a metabolic process. Signal transduction covers signaling from receptors located on the surface of the cell and signaling via molecules located within the cell. For signaling between cells, signal transduction is

										restricted to events at and within the receiving cell. [GOC:go_curators, GOC:mtg_signaling_feb11]
gmo-miR-9	K01870	0	IARS	ENSGMOG0000003632	ENSDARG0000007955	ko00970 Aminoacyl-tRNA biosynthesis	GO:0000166	nucleotide binding	MF	Interacting selectively and non-covalently with a nucleotide, any compound consisting of a nucleoside that is esterified with (ortho)phosphate or an oligophosphate at any hydroxyl group on the ribose or deoxyribose. [GOC:mah, ISBN:0198547684]
gmo-miR-206			CCNY	ENSGMOG0000003794	ENSG00000108100		GO:0019901	protein kinase binding	MF	Interacting selectively and non-covalently with a protein kinase, any enzyme that catalyzes the transfer of a phosphate group, usually from ATP, to a protein substrate. [GOC:jl]
gmo-miR-19a	K04718	7,0142 E-154	SPHK1	ENSGMOG0000003929	ENSG00000176170	ko01100 Metabolic pathways	GO:0004143	ko01100 Metabolic pathways		
gmo-miR-181a	K08749	0	SLC27A6	ENSGMOG0000003965	ENSDARG0000046053	ko03320 PPAR signaling pathway	GO:0003824	ko03320 PPAR signaling pathway		
gmo-miR-9	K01346	1,3805 7E-66	Cela2a	ENSGMOG0000004069	ENSDARG0000053323	ko04972 Pancreatic secretion	GO:0004252	serine-type endopeptidase activity	MF	Catalysis of the hydrolysis of internal, alpha-peptide bonds in a polypeptide chain by a catalytic mechanism that involves a catalytic triad consisting of a serine nucleophile that is activated by a proton relay involving an acidic residue (e.g. aspartate or glutamate) and a basic residue (usually histidine). [GOC:mah, <a href="http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE">http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE</a> , ISBN:0716720094]
gmo-miR-181a	K03853	3,1204 2E-25	Gca	ENSGMOG0000004075	ENSDARG0000020187	ko04510 Focal adhesion	GO:0005509	ko04510 Focal adhesion		
gmo-miR-206	K06236	0,0046 2568	PDF	ENSGMOG0000004104	ENSDARG0000013950	ko04151 PI3K-Akt signaling pathway	GO:0005506	iron ion binding	MF	Interacting selectively and non-covalently with iron (Fe) ions." [GOC:ai],IEA,MF ENSGMOG00000004104,ENSGMOT00000004464, GO:0003674,MF,"Elemental activities, such as

										catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-11240	K06236	0,0046 2568	PDF	ENSGMOG0 0000004104	ENSDARG00 000013950	ko04151 PI3K-Akt signaling pathway	GO:00055 06	iron ion binding	MF	Interacting selectively and non-covalently with iron (Fe) ions." [GOC:ai],IEA,MF ENSGMOG00000004104,ENSGMOT00000004464, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K01398	0	MMP2	ENSGMOG0 0000004117	ENSDARG00 000017676	ko04670 Leukocyte transendothelial migration	GO:00042 22	ko04670 Leukocyte transendothelia l migration		
gmo-miR-181a	K12327	0,0007 26259	Ebna1bp 2	ENSGMOG0 0000004150	ENSDARG00 000054980	ko04270 Vascular smooth muscle contraction		ko04270 Vascular smooth muscle contraction		
gmo-miR-130b	K07594	6,3103 6E-28	hoxd3a	ENSGMOG0 0000004252	ENSDARG00 000059280	ko04911 Insulin secretion	GO:00010 71	ko04911 Insulin secretion		
gmo-miR-9	K06229	0	SUFU	ENSGMOG0 0000004294	ENSG00000 107882	ko04340 Hedgehog signaling pathway	GO:00081 34	transcription factor binding	MF	Interacting selectively and non-covalently with a transcription factor, any protein required to initiate or regulate transcription. [ISBN:0198506732]
gmo-miR-181a	K06095	5,3815 9E-09	Apba2	ENSGMOG0 0000004377	ENSDARG00 000063314	ko04530 Tight junction	GO:00055 15	ko04530 Tight junction		
gmo-miR-181a	K05627	6,7025 2E-81	Baiap2l1	ENSGMOG0 0000004389	ENSDARG00 000031119	ko04810 Regulation of actin cytoskeleton	GO:00055 15	ko04810 Regulation of actin cytoskeleton		

gmo-miR-11240	K04675	0	ACVR1	ENSGMOG0000004447	ENSDARG0000018179	ko04550 Signaling pathways regulating pluripotency of stem cells	GO:0003674	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K01840	1,2972 E-133	PMM1	ENSGMOG0000004497	ENSDARG0000038398	ko01100 Metabolic pathways	GO:0004615	ko01100 Metabolic pathways		
gmo-miR-146	K05749	0	cyfip1	ENSGMOG0000004542	ENSDARG0000044345	ko04810 Regulation of actin cytoskeleton				#I/T
gmo-miR-206	K05749	0	cyfip1	ENSGMOG0000004542	ENSDARG0000044345	ko04810 Regulation of actin cytoskeleton				
gmo-miR-206	K13512	9,8613 E-137	lpcat4	ENSGMOG0000004565	ENSDARG0000035028	ko01100 Metabolic pathways	GO:0016746	transferase activity, transferring acyl groups	MF	Catalysis of the transfer of an acyl group from one compound (donor) to another (acceptor). [GOC:jl, ISBN:0198506732]
gmo-miR-146	K09188	8,6317 E-140	Mll3	ENSGMOG0000004664	ENSDARG0000079312	ko00310 Lysine degradation	GO:0032259	methylation	BF	The process in which a methyl group is covalently attached to a molecule." [GOC:mah],IEA,BF ENSGMOT00000005111, GO:0008150,BF,"Any process specifically pertinent to the functioning of integrated living units: cells, tissues, organs, and organisms. A process is a collection of molecular events with a defined beginning and end. [GOC:go_curators, GOC:isa_complete]
gmo-miR-19a			FAM135A	ENSGMOG0000004667	ENSDARG0000059843		GO:0016788			
gmo-miR-19a	K08746	0	SLC27A2	ENSGMOG0000004720	ENSDARG0000088119	ko04146 Peroxisome	GO:0003824	ko04146 Peroxisome		

gmo-miR-130b	K08342	0,0052 8079	nl BL_O RD_ID 7 5167	ENSGMOG0 0000004765	ENSDARG00 000069674	ko04140 Regulation of autophagy		ko04140 Regulation of autophagy		
gmo-miR-19a	K10892	0,0001 72355	DENND2 A	ENSGMOG0 0000004777	ENSG00000 146966		GO:00036 76			
gmo-miR-181a	K07416	2,4487 E-135	cyp2k1	ENSGMOG0 0000004785	ENSDARG00 000009874	ko00980 Metabolism of xenobiotics by cytochrome P450	GO:00055 06	ko00980 Metabolism of xenobiotics by cytochrome P450		
gmo-miR-9	K02157	9,0337 2E-95	axin1	ENSGMOG0 0000004824	ENSDARG00 000026534	ko04390 Hippo signaling pathway	GO:00082 77	regulation of G- protein coupled receptor protein signaling pathway	BF	Any process that modulates the frequency, rate or extent of G-protein coupled receptor protein signaling pathway activity. [GOC:go_curators]
gmo-miR-181a	K06210	0	nmnat2	ENSGMOG0 0000004970	ENSDARG00 000004580	ko01100 Metabolic pathways	GO:00038 24	ko01100 Metabolic pathways		
gmo-miR-19a			Xk	ENSGMOG0 0000005111	ENSDARG00 000044011					
gmo-miR-206	K09561	0	STUB1	ENSGMOG0 0000005122	ENSDARG00 000045228	ko04141 Protein processing in endoplasmic reticulum	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000005122,ENSGMOT00000005584, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]



gmo-miR-9			ltv1	ENSGMOG0000005158	ENSDARG0000008490					
gmo-miR-19a	K08028	5,7576 E-32	neurog1	ENSGMOG0000005169	ENSDARG00000056130		GO:0046983			
gmo-miR-206	K04862	0	Cacnb1	ENSGMOG0000005267	ENSDARG0000002167	ko04010 MAPK signaling pathway	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000005267,ENSGMOT00000005755, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-192	K01807	7,4829 E-122	RPIA	ENSGMOG0000005294	ENSDARG00000056640	ko01100 Metabolic pathways	GO:0016853	isomerase activity	BF	The branch of the pentose-phosphate shunt which does not involve oxidation reactions. It comprises a series of sugar phosphate interconversions, starting with ribulose 5-P and producing fructose 6-P and glyceraldehyde 3-P. [ISBN:0198506732, MetaCyc:NONOXIPENT-PWY]
gmo-miR-9	K13575	2,2750 8E-30	SLC4A11	ENSGMOG0000005315	ENSDARG00000075532	ko04972 Pancreatic secretion	GO:0006820	anion transport	BF	The directed movement of anions, atoms or small molecules with a net negative charge, into, out of or within a cell, or between cells, by means of some agent such as a transporter or pore. [GOC:ai]
gmo-miR-206	K13575	2,2750 8E-30	SLC4A11	ENSGMOG0000005315	ENSDARG00000075532	ko04972 Pancreatic secretion	GO:0006820	anion transport	BF	The directed movement of anions, atoms or small molecules with a net negative charge, into, out of or within a cell, or between cells, by means of some agent such as a transporter or pore. [GOC:ai]
gmo-miR-130b	K04381	5,6082 1E-74	Stmn1	ENSGMOG0000005322	ENSDARG0000004169	ko04010 MAPK signaling pathway	GO:0031110	ko04010 MAPK signaling pathway		

gmo-miR-206	K06533	3,5523 E-160	Cdh10	ENSGMOG0 0000005335	ENSDARG00 000091395	ko04670 Leukocyte transendothelial migration	GO:00055 09	calcium ion binding	MF	Interacting selectively and non-covalently with calcium ions (Ca2+)." [GOC:ai],IEA,MF ENSGMOG00000005335,ENSGMOT00000005834, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K02157	7,3311 2E-06	SNX25	ENSGMOG0 0000005477	ENSDARG00 000088264	ko04390 Hippo signaling pathway	GO:00081 50	ko04390 Hippo signaling pathway		
gmo-miR-19a	K14380	0	FHL2	ENSGMOG0 0000005511	ENSG00000 115641	ko04380 Osteoclast differentiation	GO:00082 70	ko04380 Osteoclast differentiation		
gmo-miR-9	K03368	2,2171 7E-91	St3gal2	ENSGMOG0 0000005597	ENSDARG00 000007494	ko01100 Metabolic pathways	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K10396	5,4761 8E-79	KIF3A	ENSGMOG0 0000005722	ENSDARG00 000009850	ko04728 Dopaminergic synapse	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K10396	5,4761 8E-79	KIF3A	ENSGMOG0 0000005722	ENSDARG00 000009850	ko04728 Dopaminergic synapse	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a			grtp1a	ENSGMOG0 0000005798	ENSDARG00 000030269		GO:00050 97			
gmo-miR-181a	K08803	1,5218 E-21	Fem1c	ENSGMOG0 0000005806	ENSDARG00 000013375		GO:00055 15			

gmo-miR-146	K04501	0	Smad4	ENSGMOG0000005844	ENSDARG0000023527	ko04390 Hippo signaling pathway	GO:0006355	regulation of transcription, DNA-templated	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-192	K04501	0	Smad4	ENSGMOG0000005844	ENSDARG0000023527	ko04390 Hippo signaling pathway	GO:0006355	regulation of transcription, DNA-templated	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-130b	K04714	9,1097 E-65	SAMD8	ENSGMOG0000005851	ENSDARG0000074663	ko01100 Metabolic pathways		ko01100 Metabolic pathways		
gmo-miR-9	K15604	8,1719 3E-41	tal1	ENSGMOG0000005856	ENSDARG0000019930		GO:0046983	protein dimerization activity	MF	The formation of a protein dimer, a macromolecular structure consists of two noncovalently associated identical or nonidentical subunits. [ISBN:0198506732]
gmo-miR-206			COMMD5	ENSGMOG0000005916	ENSDARG0000029660					
gmo-miR-181a	K00820	0	Gfpt1	ENSGMOG0000005919	ENSDARG0000086866	ko01100 Metabolic pathways	GO:0008152	ko01100 Metabolic pathways		
gmo-miR-11240	K12968	1,2697 5E-84	Adarb1	ENSGMOG0000005924	ENSDARG0000003544	ko04623 Cytosolic DNA-sensing pathway	GO:0004000	adenosine deaminase activity	MF	Catalysis of the hydrolysis of any carbon-nitrogen bond, C-N, with the exception of peptide bonds. [GOC:jl]
gmo-miR-146			LEPROTL1	ENSGMOG0000005981	ENSDARG0000087172					
gmo-miR-206			LEPROTL1	ENSGMOG0000005981	ENSDARG0000087172					
gmo-miR-130b	K13749	0,0005 72673	TM9SF3	ENSGMOG0000006049	ENSDARG0000028748	ko04744 Phototransduction	GO:0005575	ko04744 Phototransduction (10)		
gmo-miR-19a	K11839	1,7087 5E-19	Usp45	ENSGMOG0000006066	ENSDARG0000075013	ko04144 Endocytosis	GO:0036459	ubiquitinyl hydrolase activity	MF	Catalysis of the thiol-dependent hydrolysis of an ester, thioester, amide, peptide or isopeptide bond formed by the C-terminal glycine of ubiquitin. [EC:3.4.19.12, GOC:bf, GOC:ka]

gmo-miR-11240	K11839	1,7087 5E-19	Usp45	ENSGMOG0 0000006066	ENSDARG00 000075013	ko04144 Endocytosis	GO:00364 59	ubiquitinyl hydrolase activity	MF	Catalysis of the thiol-dependent hydrolysis of an ester, thioester, amide, peptide or isopeptide bond formed by the C-terminal glycine of ubiquitin. [EC:3.4.19.12, GOC:bf, GOC:ka]
gmo-miR-206	K03869	0	CUL3	ENSGMOG0 0000006221	ENSDARG00 000038967	ko04120 Ubiquitin mediated proteolysis	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9			TMED4	ENSGMOG0 0000006225	ENSDARG00 000024954		GO:00068 10	transport	BF	The directed movement of substances (such as macromolecules, small molecules, ions) into, out of or within a cell, or between cells, or within a multicellular organism by means of some agent such as a transporter or pore. [GOC:dph, GOC:jl, GOC:mah]
gmo-miR-19a	K10137	0,0001 3946	ZNF385D	ENSGMOG0 0000006299	ENSDARG00 000086162	ko04115 p53 signaling pathway	GO:00082 70	ko04115 p53 signaling pathway		
gmo-miR-206	K13855	0	SLC4A2	ENSGMOG0 0000006300	ENSDARG00 000052330	ko04972 Pancreatic secretion	GO:00054 52	inorganic anion exchanger activity	MF	Catalysis of the transfer of a solute or solutes from one side of a membrane to the other according to the reaction: inorganic anion A(out) + inorganic anion B(in) = inorganic anion A(in) + inorganic anion B(out)." [GOC:mah],IEA,MF ENSGMOG0000006300,ENSGMOT0000006915, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b			ZFAND5	ENSGMOG0 0000006340	ENSDARG00 000018898		GO:00082 70			
gmo-miR-9	K15612	1,5940 8E-22	LMX1B	ENSGMOG0 0000006452	ENSDARG00 000019306		GO:00036 77	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA

										(deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]
gmo-miR-206	K04664	0	gdf6a	ENSGMOG0000006494	ENSDARG0000053479	ko04390 Hippo signaling pathway	GO:0040007	growth	BF	The increase in size or mass of an entire organism, a part of an organism or a cell. [GOC:bf, GOC:ma]
gmo-miR-19a	K13883	0,00137335	mxd3	ENSGMOG0000006646	ENSDARG0000057432	ko04145 Phagosome	GO:0046983	ko04145 Phagosome		
gmo-miR-130b	K13883	0,00137335	mxd3	ENSGMOG0000006646	ENSDARG0000057432	ko04145 Phagosome	GO:0046983	ko04145 Phagosome		
gmo-miR-19a	K07198	3,18683E-49	Nim1	ENSGMOG0000006689	ENSDARG0000079988	ko04151 PI3K-Akt signaling pathway	GO:0004672	ko04151 PI3K-Akt signaling pathway		
gmo-miR-181a	K05036	0	SLC6A3	ENSGMOG0000006703	ENSDARG0000004219	ko04728 Dopaminergic synapse	GO:0005328	ko04728 Dopaminergic synapse		
gmo-miR-9	K04407	0,00909049	SOBP	ENSGMOG0000006723	ENSDARG0000017386	ko04010 MAPK signaling pathway				
gmo-miR-130b	K03259	6,668E-125	eif4e	ENSGMOG0000006731	ENSDARG0000012274	ko04151 PI3K-Akt signaling pathway	GO:0003743	ko04151 PI3K-Akt signaling pathway		
gmo-miR-206	K08823	1,67506E-39	PRPF4B	ENSGMOG0000006746	ENSDARG0000040310		GO:0004672	protein kinase activity	MF	Catalysis of the phosphorylation of an amino acid residue in a protein, usually according to the reaction: a protein + ATP = a phosphoprotein + ADP. [MetaCyc:PROTEIN-KINASE-RXN]
gmo-miR-181a	K10840	3,24605E-09	Rcn2	ENSGMOG0000006747	ENSDARG0000039378	ko03420 Nucleotide excision repair	GO:0043167	ko03420 Nucleotide excision repair		
gmo-miR-11240	K00182	2,9529E-172	WNT2B	ENSGMOG0000006778	ENSDARG0000032234	ko04390 Hippo signaling pathway	GO:0005102	receptor binding	MF	Interacting selectively and non-covalently with one or more specific sites on a receptor molecule, a macromolecule that undergoes combination with a hormone, neurotransmitter, drug or intracellular messenger to initiate a change in cell function. [GOC:bf, GOC:ceb, ISBN:0198506732]

gmo-miR-19a	K03260	0,0020 1905	SFXN1	ENSGMOG0 0000006881	ENSDARG00 000057374	ko03013 RNA transport	GO:00150 75	ko03013 RNA transport		
gmo-miR-146	K12559	1,3105 E-30	PLEKHH2	ENSGMOG0 0000006939	ENSDARG00 000040851	ko04666 Fc gamma R- mediated phagocytosis	GO:00058 56	cytoskeleton	CC	Any of the various filamentous elements that form the internal framework of cells, and typically remain after treatment of the cells with mild detergent to remove membrane constituents and soluble components of the cytoplasm. The term embraces intermediate filaments, microfilaments, microtubules, the microtrabecular lattice, and other structures characterized by a polymeric filamentous nature and long-range order within the cell. The various elements of the cytoskeleton not only serve in the maintenance of cellular shape but also have roles in other cellular functions, including cellular movement, cell division, endocytosis, and movement of organelles. [GOC:mah, ISBN:0198547684, PMID:16959967]
gmo-miR-146	K08889	3,0537 6E-12	bcar3	ENSGMOG0 0000007057	ENSDARG00 000016981		GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K12823	1,4038 2E-47	DDX18	ENSGMOG0 0000007113	ENSDARG00 000030789	ko03040 Spliceosome	GO:00055 24	ATP binding	MF	Interacting selectively and non-covalently with ATP, adenosine 5'-triphosphate, a universally important coenzyme and enzyme regulator. [ISBN:0198506732]
gmo-miR-19a			TSC22D1	ENSGMOG0 0000007120	ENSDARG00 000038306		GO:00037 00	sequence- specific DNA binding transcription factor activity	MF	Interacting selectively and non-covalently with a specific DNA sequence in order to modulate transcription. The transcription factor may or may not also interact selectively with a protein or macromolecular complex. [GOC:curators, GOC:txnOH]

gmo-miR-206			TSC22D1	ENSGMOG0000007120	ENSDARG0000038306		GO:0003700	sequence-specific DNA binding transcription factor activity	MF	Interacting selectively and non-covalently with a specific DNA sequence in order to modulate transcription. The transcription factor may or may not also interact selectively with a protein or macromolecular complex. [GOC:curators, GOC:txnOH]
gmo-miR-206	K06109	3,1963 8E-37	RAB34	ENSGMOG0000007140	ENSDARG0000010977	ko04530 Tight junction	GO:0005525	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR-9	K06101	0,0038 1519	n BL_ORD_ID 5 5085	ENSGMOG0000007183		ko04530 Tight junction				
gmo-miR-146	K05725	8,4119 E-134	PTK2	ENSGMOG0000007215	ENSDARG0000004672	ko04151 PI3K-Akt signaling pathway	GO:0005575	ko04151 PI3K-Akt signaling pathway	CC	The part of a cell or its extracellular environment in which a gene product is located. A gene product may be located in one or more parts of a cell and its location may be as specific as a particular macromolecular complex, that is, a stable, persistent association of macromolecules that function together. [GOC:go_curators, NIF_Subcellular:sao-1337158144]
gmo-miR-181a	K05725	8,4119 E-134	PTK2	ENSGMOG0000007215	ENSDARG0000004672	ko04151 PI3K-Akt signaling pathway	GO:0005575	ko04151 PI3K-Akt signaling pathway	CC	The part of a cell or its extracellular environment in which a gene product is located. A gene product may be located in one or more parts of a cell and its location may be as specific as a particular macromolecular complex, that is, a stable, persistent association of macromolecules that function together. [GOC:go_curators, NIF_Subcellular:sao-1337158144]
gmo-miR-206	K06254	1,7976 6E-07	FSTL1	ENSGMOG0000007270	ENSDARG0000039576	ko04512 ECM-receptor interaction	GO:0043167	ion binding	MF	Interacting selectively and non-covalently with ions, charged atoms or groups of atoms. [GOC:jl]
gmo-miR-130b	K15044	7,0185 E-154	AGFG1	ENSGMOG0000007273	ENSG00000173744		GO:0030234			

gmo-miR-130b	K08516	1,5016 E-116	ykt6	ENSGMOG0 0000007299	ENSDARG00 000038308	ko04130 SNARE interactions in vesicular transport	GO:00161 92	vesicle- mediated transport	BF	A cellular transport process in which transported substances are moved in membrane-bounded vesicles; transported substances are enclosed in the vesicle lumen or located in the vesicle membrane. The process begins with a step that directs a substance to the forming vesicle, and includes vesicle budding and coating. Vesicles are then targeted to, and fuse with, an acceptor membrane. [GOC:ai, GOC:mah, ISBN:08789310662000]
gmo-miR-206	K08516	1,5016 E-116	ykt6	ENSGMOG0 0000007299	ENSDARG00 000038308	ko04130 SNARE interactions in vesicular transport	GO:00161 92	vesicle- mediated transport	BF	A cellular transport process in which transported substances are moved in membrane-bounded vesicles; transported substances are enclosed in the vesicle lumen or located in the vesicle membrane. The process begins with a step that directs a substance to the forming vesicle, and includes vesicle budding and coating. Vesicles are then targeted to, and fuse with, an acceptor membrane. [GOC:ai, GOC:mah, ISBN:08789310662000]
gmo-miR-181a	K01647	0	cs	ENSGMOG0 0000007367	ENSDARG00 000070395	ko01100 Metabolic pathways	GO:00469 12	ko01100 Metabolic pathways		
gmo-miR-181a	K03259	2,9664 4E-20	eif4e3	ENSGMOG0 0000007389	ENSDARG00 000005078	ko04151 PI3K-Akt signaling pathway	GO:00037 43	ko04151 PI3K- Akt signaling pathway		
gmo-miR-19a	K07905	1,7222 E-148	nl BL_O RD_ID 3 17424	ENSGMOG0 0000007390	WBGENE00 004274	ko04144 Endocytosis	GO:00036 74	ko04144 Endocytosis		
gmo-miR-146	K12615	0,0001 17144	YJEFN3	ENSGMOG0 0000007424	ENSDARG00 000061692	ko03018 RNA degradation				
gmo-miR-206	K10636	3,0303 E-08	Rnf122	ENSGMOG0 0000007472	ENSDARG00 000063483	ko04141 Protein processing in	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or



						endoplasmic reticulum				more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000007472,ENSGMOT00000008233, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-146	K14650	1,7523 6E-05	ING2	ENSGMOG0 0000007511	ENSDARG00 000013042	ko03022 Basal transcription factors	GO:00082 70	zinc ion binding	MF	Interacting selectively and non-covalently with zinc (Zn) ions." [GOC:ai],IEA,MF ENSGMOG00000007511,ENSGMOT00000008262, GO:0043167,ion binding,"Interacting selectively and non-covalently with ions, charged atoms or groups of atoms. [GOC:jl]
gmo-miR-146	K00876	7,0081 E-142	uck2a	ENSGMOG0 0000007600	ENSDARG00 000006074	ko01100 Metabolic pathways	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K12196	1,4730 9E-47	atad1a	ENSGMOG0 0000007603	ENSDARG00 000023267	ko04144 Endocytosis	GO:00055 24	ko04144 Endocytosis		
gmo-miR-19a	K06244	0,0030 7614	rgs7bpa	ENSGMOG0 0000007714	ENSDARG00 000060601	ko04151 PI3K-Akt signaling pathway		ko04151 PI3K-Akt signaling pathway		
gmo-miR-9	K10591	5,6534 2E-05	DGCR8	ENSGMOG0 0000007715	ENSDARG00 000035564	ko04144 Endocytosis	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000007715,ENSGMOT00000008500, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene

										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K10591	5,6534 2E-05	DGCR8	ENSGMOG0 0000007715	ENSDARG00 000035564	ko04144 Endocytosis	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000007715,ENSGMOT00000008500, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9			CBWD1	ENSGMOG0 0000007807	ENSDARG00 000004318					
gmo-miR-146	K11352	5,5684 E-06	Ndufaf2	ENSGMOG0 0000007829	ENSDARG00 000069286	ko01100 Metabolic pathways				
gmo-miR-206	K07937	6,388E- 111	Arf2	ENSGMOG0 0000007850	WBGENE00 000182	ko04144 Endocytosis	GO:00055 25	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR-146	K00953	0	flad1	ENSGMOG0 0000007867	ENSDARG00 000070390	ko01100 Metabolic pathways	GO:00067 77	Mo- molybdopterin cofactor biosynthetic process	BF	The chemical reactions and pathways resulting in the formation of the Mo-molybdopterin cofactor, essential for the catalytic activity of some enzymes. The cofactor consists of a mononuclear molybdenum (Mo) ion coordinated by one or two molybdopterin ligands. [http://www.sunysb.edu/biochem/BIOCHEM/faculty/pages/schindelin/, ISSN:09498257, PMID:22370186, PMID:23201473]
gmo-miR-181a			zgc:1036 25	ENSGMOG0 0000008215	ENSDARG00 000038770		GO:00081 68			
gmo-miR-181a	K00710	0	Galnt6	ENSGMOG0 0000008290	ENSDARG00 000014386	ko01100 Metabolic pathways		ko01100 Metabolic pathways		

gmo-miR-206			Morf4l1	ENSGMOG0 0000008374	ENSDARG00 000041155					
gmo-miR-181a	K03249	0,0096 1441	FAM5C	ENSGMOG0 0000008381	ENSDARG00 000061051	ko03013 RNA transport		ko03013 RNA transport		
gmo-miR-146	K13126	2,0978 5E-11	SPEN	ENSGMOG0 0000008397	ENSDARG00 000074245	ko03013 RNA transport				
gmo-miR-19a	K10955	0,0003 22767	znf703	ENSGMOG0 0000008426	ENSG00000 183779		GO:00468 72			
gmo-miR-181a	K02183	3,7484 8E-44	CALML4	ENSGMOG0 0000008451	ENSDARG00 000059347	ko04015 Rap1 signaling pathway	GO:00431 67	ko04015 Rap1 signaling pathway		
gmo-miR-130b	K06115	0,0000 45634	Snx1	ENSGMOG0 0000008480	ENSDARG00 000079116		GO:00350 91			
gmo-miR-181a	K15542	0,0001 10544	FAM171 B	ENSGMOG0 0000008599		ko03015 mRNA surveillance pathway	GO:00036 74	ko03015 mRNA surveillance pathway		
gmo-miR-9	K04250	1,2613 6E-22	RGR	ENSGMOG0 0000008610	ENSDARG00 000044445	ko04744 Phototransduction	GO:00049 30	G-protein coupled receptor activity	MF	Combining with an extracellular signal and transmitting the signal across the membrane by activating an associated G-protein; promotes the exchange of GDP for GTP on the alpha subunit of a heterotrimeric G-protein complex. [GOC:bf, <a href="http://www.iuphar-db.org">http://www.iuphar-db.org</a> , Wikipedia:GPCR]
gmo-miR-206	K06823	4,9127 6E-61	Col18a1	ENSGMOG0 0000008648	ENSDARG00 000036558	ko04974 Protein digestion and absorption	GO:00051 98	structural molecule activity	MF	The action of a molecule that contributes to the structural integrity of a complex or assembly within or outside a cell." [GOC:mah],IEA,MF ENSGMOT00000009530,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-9	K05849	0	Slc8a2	ENSGMOG0000008693	ENSDARG0000008912	ko04022 cGMP-PKG signaling pathway	GO:0007154	cell communication	BF	Any process that mediates interactions between a cell and its surroundings. Encompasses interactions such as signaling or attachment between one cell and another cell, between a cell and an extracellular matrix, or between a cell and any other aspect of its environment. [GOC:mah]
gmo-miR-181a	K01874	0,00757003	CADPS	ENSGMOG0000008765	ENSDARG00000043661	ko00970 Aminoacyl-tRNA biosynthesis		ko00970 Aminoacyl-tRNA biosynthesis		
gmo-miR-130b	K07747	0	BACE2	ENSGMOG0000008848	ENSDARG00000044781		GO:0004190			
gmo-miR-181a	K01349	9,187E-179	Pcsk1	ENSGMOG0000008907	ENSDARG00000002600		GO:0004252			
gmo-miR-181a			thns12	ENSGMOG0000008912	ENSDARG00000032584		GO:0030170			
gmo-miR-192	K02154	0	Atp6v0a2	ENSGMOG0000008927	ENSDARG00000035565	ko01100 Metabolic pathways	GO:0005507	copper ion binding	MF	Interacting selectively and non-covalently with copper (Cu) ions." [GOC:ai],IEA,MF ENSGMOT00000009809, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K08487	3,90008E-89	Stx11	ENSGMOG0000008961	ENSDARG00000029290	ko04130 SNARE interactions in vesicular transport	GO:0005515	ko04130 SNARE interactions in vesicular transport		
gmo-miR-206	K03372	0	Slc33a1	ENSGMOG0000009015	ENSDARG00000020085	ko01100 Metabolic pathways	GO:0021955	central nervous system neuron axonogenesis	BF	Generation of a long process from a neuron whose cell body resides in the central nervous system. The process carries efferent (outgoing) action potentials from the cell body towards

										target cells. [GO_REF:0000021, GOC:cls, GOC:dgh, GOC:dph, GOC:jid, GOC:mtg_15jun06]
gmo-miR-9	K06236	0	Col11a1	ENSGMOG0000009072	ENSDARG0000017360	ko04151 PI3K-Akt signaling pathway	GO:0005201	extracellular matrix structural constituent	MF	The action of a molecule that contributes to the structural integrity of the extracellular matrix." [GOC:mah],IEA,MF ENSGMOG00000009072,ENSGMOT00000009997, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K04508	2,3655 E-16	hira	ENSGMOG0000009104	ENSDARG0000013434	ko04310 Wnt signaling pathway	GO:0006355	regulation of transcription, DNA-templated	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-9	K10594	0,0034 4515	Spsb4	ENSGMOG0000009180	ENSDARG0000016084	ko04120 Ubiquitin mediated proteolysis	GO:0035556	intracellular signal transduction	BF	The process in which a signal is passed on to downstream components within the cell, which become activated themselves to further propagate the signal and finally trigger a change in the function or state of the cell. [GOC:bf, GOC:jl, GOC:signaling, ISBN:3527303782]
gmo-miR-11240	K11839	7,5931 2E-34	Usp22	ENSGMOG0000009271	ENSG00000124422	ko04144 Endocytosis	GO:0036459	ubiquitinyl hydrolase activity	MF	Catalysis of the thiol-dependent hydrolysis of an ester, thioester, amide, peptide or isopeptide bond formed by the C-terminal glycine of ubiquitin. [EC:3.4.19.12, GOC:bf, GOC:ka]
gmo-miR-130b	K00922	0	PIK3CG	ENSGMOG0000009314	ENSDARG0000017757	ko04151 PI3K-Akt signaling pathway	GO:0016773	ko04151 PI3K-Akt signaling pathway		
gmo-miR-181a	K13289	0	CTSA	ENSGMOG0000009336	ENSDARG0000087307	ko04142 Lysosome	GO:0004185	ko04142 Lysosome		
gmo-miR-146	K12182	6,4160 2E-17	WDFY1	ENSGMOG0000009437	ENSDARG0000005425	ko04144 Endocytosis	GO:0046872	metal ion binding	MF	Interacting selectively and non-covalently with any metal ion." [GOC:ai],IEA,MF ENSGMOG00000009437,ENSGMOT00000010355, GO:0003674,MF,"Elemental activities, such as

										catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K06254	1,316E-82	EGFLAM	ENSGMOG0000009470	ENSDARG0000059416	ko04512 ECM-receptor interaction	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG0000009470,ENSGMOT00000010398,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K05105	0	epha3	ENSGMOG0000009595		ko04360 Axon guidance	GO:0003674	ko04360 Axon guidance		
gmo-miR-206	K10428	1,1609E-90	DCTN6	ENSGMOG0000009637	ENSG00000104671	ko04962 Vasopressin-regulated water reabsorption				
gmo-miR-146	K04604	0	Grm1	ENSGMOG0000009695	ENSDARG0000026796	ko04724 Glutamatergic synapse	GO:0003674	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-11240	K04140	0	nl BL_ORD_ID 9751	ENSGMOG0000009752	WBGENE00006411	#N/A	#I/T			#I/T
gmo-miR-206			AIM1	ENSGMOG0000009788	ENSDARG0000031782		GO:0005215	transporter activity	MF	Enables the directed movement of substances (such as macromolecules, small molecules, ions) into, out of or within a cell, or between cells. [GOC:ai, GOC:dgf]

gmo-miR-181a			ch211-149a19.1	ENSGMOG0000009833	ENSDARG0000074505					
gmo-miR-9	K06820	0	PLXNA3	ENSGMOG0000010058	ENSDARG0000007172	ko04360 Axon guidance	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000010058,ENSGMOT00000011069,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b			C3orf18	ENSGMOG0000010059	ENSDARG0000090634					
gmo-miR-206			LGALS2	ENSGMOG0000010104	ENSDARG0000038153		GO:0030246	carbohydrate binding	MF	Interacting selectively and non-covalently with any carbohydrate, which includes monosaccharides, oligosaccharides and polysaccharides as well as substances derived from monosaccharides by reduction of the carbonyl group (alditols), by oxidation of one or more hydroxy groups to afford the corresponding aldehydes, ketones, or carboxylic acids, or by replacement of one or more hydroxy group(s) by a hydrogen atom. Cyclitols are generally not regarded as carbohydrates. [CHEBI:16646, GOC:mah]
gmo-miR-19a	K03006	0,00181834	RBMS1	ENSGMOG0000010108	ENSDARG0000044179	ko01100 Metabolic pathways		ko01100 Metabolic pathways		
gmo-miR-206	K05625	0	TGM2	ENSGMOG0000010159	ENSDARG0000074094		GO:0018149	peptide cross-linking	BF	The formation of a covalent cross-link between or within protein chains." [GOC:jsg],IEA,BF ENSGMOG00000010159,ENSGMOT00000011173,GO:0006464,cellular protein modification process,"The covalent alteration of one or more

										amino acids occurring in proteins, peptides and nascent polypeptides (co-translational, post-translational modifications) occurring at the level of an individual cell. Includes the modification of charged tRNAs that are destined to occur in a protein (pre-translation modification). [GOC:go_curators]
gmo-miR-9	K12886	0	HNRNPK	ENSGMOG0000010184	ENSDARG0000018914	ko03040 Spliceosome	GO:0004553	hydrolase activity, hydrolyzing O-glycosyl compounds	MF	Catalysis of the hydrolysis of any O-glycosyl bond." [GOC:mah],IEA,MF ENSGMOG00000010184,ENSGMOT00000011200,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K12886	0	HNRNPK	ENSGMOG0000010184	ENSDARG0000018914	ko03040 Spliceosome	GO:0004553	hydrolase activity, hydrolyzing O-glycosyl compounds	MF	Catalysis of the hydrolysis of any O-glycosyl bond." [GOC:mah],IEA,MF ENSGMOG00000010184,ENSGMOT00000011200,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K06084	4,4384 9E-15	CNN2	ENSGMOG0000010240	ENSDARG0000035858	ko04520 Adherens junction	GO:0043408	regulation of MAPK cascade	BF	Any process that modulates the frequency, rate or extent of signal transduction mediated by the MAP kinase (MAPK) cascade. [GOC:go_curators]
gmo-miR-206	K04556	6,6536 9E-12	rnf144aa	ENSGMOG0000010275	ENSDARG0000020600	ko04141 Protein processing in endoplasmic reticulum	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000010275,ENSGMOT00000011296,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a



										gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K06230	0	Gli2	ENSGMOG0000010335	ENSDARG0000020884	ko04024 cAMP signaling pathway	GO:0005506	ko04024 cAMP signaling pathway		
gmo-miR-130b			Cap2	ENSGMOG0000010398	ENSDARG0000045948		GO:0003779			
gmo-miR-181a			Cap2	ENSGMOG0000010398	ENSDARG0000045948		GO:0003779			
gmo-miR-19a	K06236	0,00749989	murc	ENSGMOG0000010417	ENSDARG0000056743	ko04151 PI3K-Akt signaling pathway		ko04151 PI3K-Akt signaling pathway		
gmo-miR-181a	K05190	0	Gabbr1	ENSGMOG0000010603	ENSDARG0000013047	ko04080 Neuroactive ligand-receptor interaction	GO:0006811	ko04080 Neuroactive ligand-receptor interaction		
gmo-miR-9	K09188	1,47623E-10	UHRF1	ENSGMOG0000010622	ENSDARG0000009946	ko00310 Lysine degradation	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000010622,ENSGMOT00000011690, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K13667	0	POGLUT1	ENSGMOG0000010626	ENSDARG0000053463	ko00514 Other types of O-glycan biosynthesis		ko00514 Other types of O-glycan biosynthesis		

gmo-miR-181a	K00789	0	MAT1A	ENSGMOG0000010652	ENSG00000151224	ko01100 Metabolic pathways	GO:0016765	ko01100 Metabolic pathways		
gmo-miR-181a	K05190	0	GABRR2	ENSGMOG0000010800	ENSDARG0000052982	ko04080 Neuroactive ligand-receptor interaction	GO:0006811	ko04080 Neuroactive ligand-receptor interaction		
gmo-miR-181a			gata4	ENSGMOG0000010832	ENSDARG0000035759		GO:0003700			
gmo-miR-19a			NCOA7	ENSGMOG0000010842	ENSDARG0000074924		GO:0016491			
gmo-miR-181a	K05699	1,6846 1E-16	EHBP1L1	ENSGMOG0000010874	ENSDARG0000079895	ko04510 Focal adhesion	GO:0005515	ko04510 Focal adhesion		
gmo-miR-181a	K05767	0	IQGAP1	ENSGMOG0000010974	ENSDARG0000060010	ko04810 Regulation of actin cytoskeleton	GO:0005515	ko04810 Regulation of actin cytoskeleton		
gmo-miR-9	K00314	6,1542 1E-13	foxred1	ENSGMOG0000011057	ENSDARG0000060790	ko01100 Metabolic pathways	GO:0016491	oxidoreductase activity	MF	Catalysis of an oxidation-reduction (redox) reaction, a reversible chemical reaction in which the oxidation state of an atom or atoms within a molecule is altered. One substrate acts as a hydrogen or electron donor and becomes oxidized, while the other acts as hydrogen or electron acceptor and becomes reduced. [GOC:go_curators]
gmo-miR-19a	K05703	0	fyn	ENSGMOG0000011103	ENSDARG0000011370	ko04510 Focal adhesion	GO:0004672	ko04510 Focal adhesion		
gmo-miR-206			ITGB1BP1	ENSGMOG0000011241	ENSDARG0000007169		GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000011241,ENSGMOT00000012337, GO:0003674,MF,"Elemental activities, such as

										catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K11419	6,3779 7E-06	CBX4	ENSGMOG0 0000011295	ENSDARG00 000070807	ko00310 Lysine degradation		ko00310 Lysine degradation		
gmo-miR-9	K06236	0,0007 09402	TTPAL	ENSGMOG0 0000011416	ENSDARG00 000070644	ko04151 PI3K-Akt signaling pathway				
gmo-miR-130b			CTDSP2	ENSGMOG0 0000011507	ENSDARG00 000036102		GO:00167 91			
gmo-miR-9	K02934	7,3839 E-122	RPL6	ENSGMOG0 0000011557	ENSDARG00 000058451	ko03010 Ribosome	GO:00037 35	structural constituent of ribosome	MF	The action of a molecule that contributes to the structural integrity of the ribosome." [GOC:mah],IEA,MF ENSGMOG00000011557,ENSGMOT00000012686, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K14572	0,0003 83485	SUDS3	ENSGMOG0 0000011633	ENSDARG00 000073737	ko03008 Ribosome biogenesis in eukaryotes				
gmo-miR-206	K00288	0	MTHFD1	ENSGMOG0 0000011649	ENSDARG00 000040492	ko01100 Metabolic pathways	GO:00043 29	formate- tetrahydrofolat e ligase activity	MF	Catalysis of the reaction: ATP + formate + tetrahydrofolate = ADP + phosphate + 10- formyltetrahydrofolate." [EC:6.3.4.3],IEA,MF ENSGMOG00000011649,ENSGMOT00000012799, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-9	K06571	1,8189 E-147	TSPAN7	ENSGMOG0 0000011650	ENSDARG00 000008407		GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-19a	K06571	1,8189 E-147	TSPAN7	ENSGMOG0 0000011650	ENSDARG00 000008407		GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-9	K00871	0	PHKG1	ENSGMOG0 0000011657	ENSDARG00 000030604	ko04910 Insulin signaling pathway	GO:00046 72	protein kinase activity	MF	Catalysis of the phosphorylation of an amino acid residue in a protein, usually according to the reaction: a protein + ATP = a phosphoprotein + ADP. [MetaCyc:PROTEIN-KINASE-RXN]
gmo-miR-19a	K13910	1,2659 2E-08	Fam179b	ENSGMOG0 0000011680	ENSDARG00 000039197					
gmo-miR-130b	K13910	1,2659 2E-08	Fam179b	ENSGMOG0 0000011680	ENSDARG00 000039197					
gmo-miR-9	K03066	7,7914 7E-39	Yme1l1	ENSGMOG0 0000011727	ENSDARG00 000087253	ko03050 Proteasome	GO:00042 22	ko03050 Proteasome	MF	Catalysis of the hydrolysis of internal, alpha-peptide bonds in a polypeptide chain by a mechanism in which water acts as a nucleophile, one or two metal ions hold the water molecule in place, and charged amino acid side chains are ligands for the metal ions. [GOC:mah, <a href="http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE">http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE</a> , <a href="http://merops.sanger.ac.uk/about/glossary.htm#ENDOPEPTIDASE">http://merops.sanger.ac.uk/about/glossary.htm#ENDOPEPTIDASE</a> ]

gmo-miR-181a	K03066	7,7914 7E-39	Yme1l1	ENSGMOG0 0000011727	ENSDARG00 000087253	ko03050 Proteasome	GO:00042 22	ko03050 Proteasome	MF	Catalysis of the hydrolysis of internal, alpha-peptide bonds in a polypeptide chain by a mechanism in which water acts as a nucleophile, one or two metal ions hold the water molecule in place, and charged amino acid side chains are ligands for the metal ions. [GOC:mah, <a href="http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE">http://merops.sanger.ac.uk/about/glossary.htm#CATTYPE</a> , <a href="http://merops.sanger.ac.uk/about/glossary.htm#ENDOPEPTIDASE">http://merops.sanger.ac.uk/about/glossary.htm#ENDOPEPTIDASE</a> ]
gmo-miR-181a	K10604	9,7157 7E-09	RNF26	ENSGMOG0 0000011790	ENSDARG00 000074074	ko04120 Ubiquitin mediated proteolysis	GO:00055 15	ko04120 Ubiquitin mediated proteolysis		
gmo-miR-181a	K14404	2,2716 6E-05	MBNL1	ENSGMOG0 0000011845	ENSG00000 152601	ko03015 mRNA surveillance pathway	GO:00468 72	ko03015 mRNA surveillance pathway		
gmo-miR-206	K09420	0	MYB	ENSGMOG0 0000011856	ENSDARG00 000053666	ko04151 PI3K-Akt signaling pathway	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K00431	0,0098 37	selt2	ENSGMOG0 0000012015	ENSDARG00 000023220	ko01100 Metabolic pathways	GO:00454 54	ko01100 Metabolic pathways		
gmo-miR-206	K14398	0,0027 4005	DPY19L4	ENSGMOG0 0000012063	ENSG00000 156162	ko03015 mRNA surveillance pathway				
gmo-miR-130b	K04424	0,0003 05733	FAM102 B	ENSGMOG0 0000012081	ENSDARG00 000053104	ko04010 MAPK signaling pathway		ko04010 MAPK signaling pathway (78)		

gmo-miR-181a	K05863	2,0715 6E-31	slc25a24	ENSGMOG0 0000012086	ENSG00000 085491	ko04022 cGMP- PKG signaling pathway	GO:00055 09	ko04022 cGMP-PKG signaling pathway		
gmo-miR-9	K01384	0	WNT11	ENSGMOG0 0000012157	ENSDARG00 000014796	ko04390 Hippo signaling pathway	GO:00051 02	receptor binding	MF	Interacting selectively and non-covalently with one or more specific sites on a receptor molecule, a macromolecule that undergoes combination with a hormone, neurotransmitter, drug or intracellular messenger to initiate a change in cell function. [GOC:bf, GOC:ceb, ISBN:0198506732]
gmo-miR-181a	K12489	0,0000 13932	Osbp2	ENSGMOG0 0000012242	ENSDARG00 000022772	ko04144 Endocytosis		ko04144 Endocytosis		
gmo-miR-19a	K03006	0,0000 61632	QSER1	ENSGMOG0 0000012283	ENSDARG00 000074750	ko01100 Metabolic pathways		ko01100 Metabolic pathways		
gmo-miR-206	K00289	0	aldh1l1	ENSGMOG0 0000012294	ENSDARG00 000077004	ko00670 One carbon pool by folate	GO:00081 68	methyltransfer ase activity	MF	Catalysis of the transfer of a methyl group to an acceptor molecule." [ISBN:0198506732],IEA,MF ENSGMOG00000012294,ENSGMOT00000013514, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K10575	2,1418 E-121	Ube2g1	ENSGMOG0 0000012306	ENSDARG00 000015292	ko04141 Protein processing in endoplasmic reticulum		ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-181a	K08769	4,5008 4E-20	Slc25a1	ENSGMOG0 0000012373	ENSDARG00 000076381	ko03320 PPAR signaling pathway		ko03320 PPAR signaling pathway		
gmo-miR-146			vps26a	ENSGMOG0 0000012384	ENSDARG00 000056549					

gmo-miR-181a	K07901	3,0126 E-138	Rab8a	ENSGMOG0 0000012489	ENSDARG00 000067920	ko04152 AMPK signaling pathway	GO:00055 25	ko04152 AMPK signaling pathway		
gmo-miR-130b	K12393	0	AP1M1	ENSGMOG0 0000012498	ENSDARG00 000020838	ko04142 Lysosome	GO:00068 86	ko04142 Lysosome		
gmo-miR-181a	K12393	0	AP1M1	ENSGMOG0 0000012498	ENSDARG00 000020838	ko04142 Lysosome	GO:00068 86	ko04142 Lysosome		
gmo-miR-206	K08803	0	DAPK3	ENSGMOG0 0000012530	ENSDARG00 000074447		GO:00046 72	protein kinase activity	MF	Catalysis of the phosphorylation of an amino acid residue in a protein, usually according to the reaction: a protein + ATP = a phosphoprotein + ADP. [MetaCyc:PROTEIN-KINASE-RXN]
gmo-miR-130b	K07205	2,6379 6E-23	EIF4EBP2	ENSGMOG0 0000012592	ENSDARG00 000031819	ko04151 PI3K-Akt signaling pathway	GO:00036 74	ko04151 PI3K- Akt signaling pathway		
gmo-miR-19a	K11459	4,4051 3E-29	PcgF3	ENSGMOG0 0000012685	ENSG00000 185619	ko04550 Signaling pathways regulating pluripotency of stem cells	GO:00055 15	ko04550 Signaling pathways regulating pluripotency of stem cells		
gmo-miR-130b	K11459	4,4051 3E-29	PcgF3	ENSGMOG0 0000012685	ENSG00000 185619	ko04550 Signaling pathways regulating pluripotency of stem cells	GO:00055 15	ko04550 Signaling pathways regulating pluripotency of stem cells		
gmo-miR-181a	K10352	2,4990 5E-07	tmem57 a	ENSGMOG0 0000012742	ENSDARG00 000005625	ko04530 Tight junction		ko04530 Tight junction		
gmo-miR-181a	K05606	6,3805 7E-85	MCEE	ENSGMOG0 0000012884	ENSDARG00 000045428	ko01100 Metabolic pathways		ko01100 Metabolic pathways		
gmo-miR-206	K13171	0,0075 6052	n4bp1	ENSGMOG0 0000012940	ENSDARG00 000057491	ko03013 RNA transport				

gmo-miR-206	K06521	0	Sema4b	ENSGMOG0000013124	ENSDARG0000074414	ko04360 Axon guidance	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOT00000014398,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K09993	9,3749 2E-53	CDKN1C	ENSGMOG0000013175	ENSDARG0000089854	ko04110 Cell cycle	GO:0003674	ko04110 Cell cycle		
gmo-miR-181a	K01367	0	CAPN3	ENSGMOG0000013176	ENSDARG0000041864	ko04141 Protein processing in endoplasmic reticulum	GO:0004198	ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-19a	K06271	0	TLN1	ENSGMOG0000013216	ENSDARG0000005333	ko04510 Focal adhesion	GO:0005856	ko04510 Focal adhesion		
gmo-miR-206			FKBP14	ENSGMOG0000013265	ENSDARG0000040695		GO:0006457	protein folding	BF	The process of assisting in the covalent and noncovalent assembly of single chain polypeptides or multisubunit complexes into the correct tertiary structure. [GOC:go_curators, GOC:rb]
gmo-miR-206	K00654	0	SPTLC1	ENSGMOG0000013388	ENSDARG0000042995	ko01100 Metabolic pathways	GO:0030170	pyridoxal phosphate binding	MF	Interacting selectively and non-covalently with pyridoxal 5' phosphate, 3-hydroxy-5-(hydroxymethyl)-2-methyl4-pyridine carboxaldehyde 5' phosphate, the biologically active form of vitamin B6. [GOC:mah, ISBN:0198506732]
gmo-miR-130b	K09502	6,1512 E-169	DNAJA1	ENSGMOG0000013423	ENSDARG0000051762	ko04141 Protein processing in endoplasmic reticulum	GO:0031072	heat shock protein binding	MF	Interacting selectively and non-covalently with a heat shock protein, any protein synthesized or activated in response to heat shock. [GOC:mah, GOC:vw]



gmo-miR-146	K09502	6,1512 E-169	DNAJA1	ENSGMOG0 0000013423	ENSDARG00 000051762	ko04141 Protein processing in endoplasmic reticulum	GO:00310 72	heat shock protein binding	MF	Interacting selectively and non-covalently with a heat shock protein, any protein synthesized or activated in response to heat shock. [GOC:mah, GOC:vw]
gmo-miR-192	K00948	2,4578 E-164	PRPS1L1	ENSGMOG0 0000013453	ENSG00000 147224	ko01100 Metabolic pathways	GO:00091 16	nucleoside metabolic process	BF	The chemical reactions and pathways involving a nucleoside, a nucleobase linked to either beta-D-ribofuranose (a ribonucleoside) or 2-deoxy-beta-D-ribofuranose, (a deoxyribonucleoside), e.g. adenosine, guanosine, inosine, cytidine, uridine and deoxyadenosine, deoxyguanosine, deoxycytidine and thymidine (= deoxythymidine). [GOC:ma]
gmo-miR-19a	K06236	4,2278 E-154	col1a2	ENSGMOG0 0000013455	ENSDARG00 000020007	ko04151 PI3K-Akt signaling pathway	GO:00052 01	ko04151 PI3K- Akt signaling pathway		
gmo-miR-181a	K04344	0,0008 72749	tnfaip8l1	ENSGMOG0 0000013529	ENSDARG00 000086457	ko04010 MAPK signaling pathway		ko04010 MAPK signaling pathway		
gmo-miR-181a			fam188a	ENSGMOG0 0000013568	ENSDARG00 000028715		GO:00049 30			
gmo-miR-19a	K15839	1,9508 E-172	Gpsm2	ENSGMOG0 0000013687	ENSDARG00 000025027		GO:00055 15			
gmo-miR-206			PHTF2	ENSGMOG0 0000013701	ENSDARG00 000077204					
gmo-miR-181a	K11248	1,7314 E-178	SH3GLB1	ENSGMOG0 0000013761	ENSDARG00 000045294	ko04144 Endocytosis	GO:00055 15	ko04144 Endocytosis		
gmo-miR-9	K02927	7,5332 2E-08	Bag6	ENSGMOG0 0000013765	ENSDARG00 000075892	ko03010 Ribosome	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000013765,ENSGMOT00000015123, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a

										gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-11240			Metrn	ENSGMOG0000013778	ENSDARG0000030367					
gmo-miR-9	K14349	4,0712 E-119	AADAC	ENSGMOG0000013815	ENSDARG0000063621	ko04976 Bile secretion	GO:0016787	hydrolase activity	MF	Catalysis of the hydrolysis of various bonds, e.g. C-O, C-N, C-C, phosphoric anhydride bonds, etc. Hydrolase is the systematic name for any enzyme of EC class 3. [ISBN:0198506732]
gmo-miR-181a	K11866	4,893E-106	stambpa	ENSGMOG0000013931	ENSDARG0000086906	ko04144 Endocytosis	GO:0005515	ko04144 Endocytosis		
gmo-miR-192	K12792	2,3064 E-118	TRIP6	ENSGMOG0000013946	ENSDARG0000069331	ko04621 NOD-like receptor signaling pathway	GO:0043167	ion binding	MF	Interacting selectively and non-covalently with ions, charged atoms or groups of atoms. [GOC:jl]
gmo-miR-9	K05872	8,9452 E-140	NFKBIE	ENSGMOG0000014026	ENSDARG0000068367	ko04722 Neurotrophin signaling pathway	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000014026,ENSGMOT00000015372, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K09479	0	ACADVL	ENSGMOG0000014084	ENSDARG0000016687	ko01100 Metabolic pathways	GO:0003995	ko01100 Metabolic pathways		
gmo-miR-9	K13575	0	SLC4A4	ENSGMOG0000014112	ENSDARG0000013730	ko04972 Pancreatic secretion	GO:0005452	inorganic anion exchanger activity	MF	Catalysis of the transfer of a solute or solutes from one side of a membrane to the other according to the reaction: inorganic anion A(out) + inorganic anion B(in) = inorganic anion A(in) + inorganic anion B(out)." [GOC:mah],IEA,MF ENSGMOG00000014112,ENSGMOT00000015497,

										GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K13575	0	SLC4A4	ENSGMOG0000014112	ENSDARG0000013730	ko04972 Pancreatic secretion	GO:0005452	inorganic anion exchanger activity	MF	Catalysis of the transfer of a solute or solutes from one side of a membrane to the other according to the reaction: inorganic anion A(out) + inorganic anion B(in) = inorganic anion A(in) + inorganic anion B(out)." [GOC:mah],IEA,MF ENSGMOG00000014112,ENSGMOT00000015497,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K12490	0,00172443	plekha8	ENSGMOG0000014145	ENSDARG0000040698	ko04144 Endocytosis	GO:0003674	ko04144 Endocytosis		
gmo-miR-181a	K10955	0,00612937	nusap1	ENSGMOG0000014195	ENSDARG0000002403		GO:0001755			
gmo-miR-181a	K07531	5,07314E-85	Rnd2	ENSGMOG0000014204	ENSDARG0000070735	ko04360 Axon guidance	GO:0005525	ko04360 Axon guidance		
gmo-miR-181a	K06236	0,000299022	Asphd2	ENSGMOG0000014252	ENSDARG0000075813	ko04151 PI3K-Akt signaling pathway	GO:0018193	ko04151 PI3K-Akt signaling pathway		
gmo-miR-9	K01059	0	LPL	ENSGMOG0000014259	ENSDARG0000087697	ko03320 PPAR signaling pathway	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000014259,ENSGMOT00000015631,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene

										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K05722	8,0767 8E-05	Osbp19	ENSGMOG0 0000014271	ENSDARG00 000069298	ko04810 Regulation of actin cytoskeleton			ko04810 Regulation of actin cytoskeleton	
gmo-miR-146	K14411	8,1131 8E-09	SAFB	ENSGMOG0 0000014280	ENSDARG00 000020467	ko03015 mRNA surveillance pathway	GO:00036 76	nucleic acid binding	MF	Interacting selectively and non-covalently with any nucleic acid." [GOC:jl],IEA,MF ENSGMOG00000014280,ENSGMOT00000015676, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K03853	1,5996 7E-60	CAPN5	ENSGMOG0 0000014423	ENSDARG00 000069717	ko04510 Focal adhesion	GO:00056 23	ko04510 Focal adhesion		
gmo-miR-181a	K01365	0	CTSL1	ENSGMOG0 0000014448	ENSDARG00 000007836	ko04145 Phagosome	GO:00082 34	ko04145 Phagosome		
gmo-miR-146	K07827	1,236E- 106	Hras1	ENSGMOG0 0000014457	ENSDARG00 000013161	ko04010 MAPK signaling pathway	GO:00055 25	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR-130b	K10601	3,4242 7E-08	RNF11	ENSGMOG0 0000014469	ENSDARG00 000040635	ko04141 Protein processing in endoplasmic reticulum	GO:00055 15	ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-19a	K09299	0,0005 56076	Homez	ENSGMOG0 0000014586	ENSDARG00 000054304		GO:00036 74			
gmo-miR-130b	K09299	0,0005 56076	Homez	ENSGMOG0 0000014586	ENSDARG00 000054304		GO:00036 74			
gmo-miR-181a			TM9SF2	ENSGMOG0 0000014604	ENSDARG00 000003866		GO:00160 21			

gmo-miR-206	K10877	0	RAD54B	ENSGMOG0000014774	ENSDARG0000092134	ko03440 Homologous recombination	GO:0003674	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K04459	2,1011 E-177	DUSP5	ENSGMOG0000014791	ENSDARG0000019307	ko04010 MAPK signaling pathway	GO:0008138	ko04010 MAPK signaling pathway		
gmo-miR-181a	K04443	0	Mapkapk2	ENSGMOG0000014838	ENSDARG0000002552	ko04010 MAPK signaling pathway	GO:0004672	ko04010 MAPK signaling pathway		
gmo-miR-206	K12366	0	Elmo2	ENSGMOG0000015018	ENSDARG0000063527	ko04062 Chemokine signaling pathway	GO:0006909	phagocytosis	BF	An endocytosis process that results in the engulfment of external particulate material by phagocytes. The particles are initially contained within phagocytic vacuoles (phagosomes), which then fuse with primary lysosomes to effect digestion of the particles. [ISBN:0198506732]
gmo-miR-9	K(lysine)	0	Kat2a	ENSGMOG0000015110	ENSDARG0000006017		GO:0005515	protein binding	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-181a			BBS1	ENSGMOG0000015148	ENSDARG0000075169		GO:0060027			
gmo-miR-19a	K06091	0	mpp5a	ENSGMOG0000015184	ENSDARG0000006272	ko04390 Hippo signaling pathway	GO:0005515	ko04390 Hippo signaling pathway		
gmo-miR-181a			HPS4	ENSGMOG0000015200	ENSDARG0000013795					
gmo-miR-206	K00939	7,5745 E-123	ak1	ENSGMOG0000015312	ENSDARG0000001950	ko01100 Metabolic pathways	GO:0005524	ATP binding	MF	Interacting selectively and non-covalently with ATP, adenosine 5'-triphosphate, a universally important coenzyme and enzyme regulator. [ISBN:0198506732]

								hydrolase activity, acting on carbon-nitrogen (but not peptide) bonds, in cyclic amides		Catalysis of the hydrolysis of any carbon-nitrogen bond, C-N, with the exception of peptide bonds. [GOC:j]
gmo-miR-206	K11540	0	CAD	ENSGMOG0000015332	ENSDARG0000041895	ko01100 Metabolic pathways	GO:0016812		MF	
gmo-miR-11240	K12319	0,00277738	CKAP5	ENSGMOG0000015373	ENSDARG0000073898	ko00230 Purine metabolism				
gmo-miR-181a	K12462	2,29602E-58	Arhgdib	ENSGMOG0000015520	ENSDARG0000004034	ko04722 Neurotrophin signaling pathway	GO:0005623	ko04722 Neurotrophin signaling pathway		
gmo-miR-206	K02365	9,63644E-05	C20orf4	ENSGMOG0000015584	ENSDARG0000018658	ko04110 Cell cycle				
gmo-miR-130b	K12495	0,00106726	exoc8	ENSGMOG0000015629	ENSDARG0000063211	ko04144 Endocytosis		ko04144 Endocytosis		
gmo-miR-181a	K08448	2,23792E-54	Ramp2	ENSGMOG0000015667	ENSDARG0000037895	ko04270 Vascular smooth muscle contraction	GO:0008565	ko04270 Vascular smooth muscle contraction		
gmo-miR-206	K13781	0	Slc7a8	ENSGMOG0000015687	ENSDARG0000075831	ko04974 Protein digestion and absorption	GO:0003674		MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K06054	1,9646E-138	hes1-b	ENSGMOG0000015708	ENSDARG0000006514	ko04330 Notch signaling pathway	GO:0003677	ko04330 Notch signaling pathway		
gmo-miR-19a	K00558	1,10489E-09	kdm2b	ENSGMOG0000015869	ENSDARG0000036593	ko01100 Metabolic pathways	GO:0005515	ko01100 Metabolic pathways		

gmo-miR-130b	K00558	1,1048 9E-09	kdm2b	ENSGMOG0 0000015869	ENSDARG00 000036593	ko01100 Metabolic pathways	GO:00055 15	ko01100 Metabolic pathways		
gmo-miR-192	K11839	1,6094 3E-53	usp20	ENSGMOG0 0000015881	ENSDARG00 000027501	ko04144 Endocytosis	GO:00364 59	ubiquitinyl hydrolase activity	MF	Catalysis of the thiol-dependent hydrolysis of an ester, thioester, amide, peptide or isopeptide bond formed by the C-terminal glycine of ubiquitin. [EC:3.4.19.12, GOC:bf, GOC:ka]
gmo-miR-181a	K06494	1,7603 6E-14	KIAA024 7	ENSGMOG0 0000015973	ENSG00000 100647	ko04514 Cell adhesion molecules (CAMs)		ko04514 Cell adhesion molecules (CAMs)		
gmo-miR-9			Emp3	ENSGMOG0 0000016022	ENSDARG00 000054894		GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-181a	K11155	0	Dgat1	ENSGMOG0 0000016023	ENSDARG00 000054914	ko01100 Metabolic pathways	GO:00018 78	ko01100 Metabolic pathways		
gmo-miR-9			TIMP2	ENSGMOG0 0000016040	ENSDARG00 000075261		GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000016040,ENSGMOT00000017630, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9			NECAB1	ENSGMOG0 0000016094	ENSG00000 125967		GO:00055 09	calcium ion binding	MF	Interacting selectively and non-covalently with calcium ions (Ca2+)." [GOC:ai],IEA,MF

										ENSGMOG00000016094,ENSGMOT00000017695,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K14010	1,8490 7E-96	tram1l1	ENSGMOG0 0000016166	ENSDARG00 000019137	ko04141 Protein processing in endoplasmic reticulum	GO:00160 21	ko04141 Protein processing in endoplasmic reticulum		
gmo-miR- 11240			Klf3	ENSGMOG0 0000016199	ENSDARG00 000015495		GO:00468 72	metal ion binding	MF	Interacting selectively and non-covalently with any metal ion." [GOC:ai],IEA,MF ENSGMOG00000016199,ENSGMOT00000017814,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K03094	2,8993 4E-92	Skp1	ENSGMOG0 0000016212	ENSDARG00 000003151	ko04141 Protein processing in endoplasmic reticulum	GO:00065 11	ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-9	K06109	1,0367 7E-35	Rab34	ENSGMOG0 0000016238	ENSDARG00 000045628	ko04530 Tight junction	GO:00055 25	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR- 11240	K01768	2,9211 5E-27	Lrrc8a	ENSGMOG0 0000016278	ENSDARG00 000032188	ko00230 Purine metabolism				
gmo-miR-9	K10591	3,1290 7E-91	HECW1	ENSGMOG0 0000016284	ENSDARG00 000090795	ko04144 Endocytosis	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000016284,ENSGMOT00000017951,



										GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K04393	2,1642 E-142	Cdc42	ENSGMOG0 0000016311	WBGENE00 000390	ko04010 MAPK signaling pathway	GO:00055 25	ko04010 MAPK signaling pathway		
gmo-miR-206	K03898	0,0006 79239	FETUB	ENSGMOG0 0000016416	ENSDARG00 000053973	ko04610 Complement and coagulation cascades	GO:00048 69	cysteine-type endopeptidase inhibitor activity	MF	Stops, prevents or reduces the activity of a cysteine-type endopeptidase, any enzyme that hydrolyzes peptide bonds in polypeptides by a mechanism in which the sulfhydryl group of a cysteine residue at the active center acts as a nucleophile. [GOC:dph, GOC:tb]
gmo-miR-181a	K12824	0	Tcerg1	ENSGMOG0 0000016505	ENSDARG00 000030665	ko03040 Spliceosome	GO:00055 15	ko03040 Spliceosome		
gmo-miR-206			nl BL_O RD_ID 1 99883	ENSGMOG0 0000016590	ENSDARG00 000054942		GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K10352	0,0093 104	Mrrf	ENSGMOG0 0000016602	ENSDARG00 000034174	ko04530 Tight junction				
gmo-miR-206	K10352	1,5014 E-16	Filip1	ENSGMOG0 0000016652	ENSDARG00 000078419	ko04530 Tight junction				
gmo-miR-146	K00273	0	DAO	ENSGMOG0 0000016658	ENSDARG00 000035601	ko01100 Metabolic pathways	GO:00164 91	oxidoreductase activity	MF	Catalysis of an oxidation-reduction (redox) reaction, a reversible chemical reaction in which the oxidation state of an atom or atoms within a molecule is altered. One substrate acts as a hydrogen or electron donor and becomes oxidized, while the other acts as hydrogen or electron acceptor and becomes reduced. [GOC:go_curators]

gmo-miR-181a	K07603	0,0026 7559	tmem2	ENSGMOG0 0000016737	ENSDARG00 000061600	ko04974 Protein digestion and absorption		ko04974 Protein digestion and absorption		
gmo-miR-130b			NICN1	ENSGMOG0 0000016757	ENSDARG00 000069677					
gmo-miR-206			Nipsnap1	ENSGMOG0 0000016779	ENSDARG00 000005320					
gmo-miR-181a	K07941	3,8693 1E-31	arl8ba	ENSGMOG0 0000016780	ENSDARG00 000006915	ko04144 Endocytosis	GO:00055 25	ko04144 Endocytosis		
gmo-miR-206	K13136	1,9873 4E-42	GEMIN8	ENSGMOG0 0000016911	ENSDARG00 000053496	ko03013 RNA transport				
gmo-miR-9	K01014	1,0838 4E-94	sult1st3	ENSGMOG0 0000016964	ENSDARG00 000003181		GO:00081 46	sulfotransferas e activity	MF	Catalysis of the transfer of a sulfate group from 3'-phosphoadenosine 5'-phosphosulfate to the hydroxyl group of an acceptor, producing the sulfated derivative and 3'-phosphoadenosine 5'-phosphate. [EC:2.8.2, GOC:curators]
gmo-miR-19a	K01014	1,0838 4E-94	sult1st3	ENSGMOG0 0000016964	ENSDARG00 000003181		GO:00081 46	sulfotransferas e activity	MF	Catalysis of the transfer of a sulfate group from 3'-phosphoadenosine 5'-phosphosulfate to the hydroxyl group of an acceptor, producing the sulfated derivative and 3'-phosphoadenosine 5'-phosphate. [EC:2.8.2, GOC:curators]
gmo-miR-146	K05691	8,3084 3E-46	Ctnnal1	ENSGMOG0 0000016992	ENSDARG00 000018162	ko04390 Hippo signaling pathway	GO:00510 15	actin filament binding	MF	Interacting selectively and non-covalently with an actin filament, also known as F-actin, a helical filamentous polymer of globular G-actin subunits. [ISBN:0198506732]
gmo-miR-19a	K02583	1,0461 E-125	NGFR	ENSGMOG0 0000017002	ENSDARG00 000057143	ko04151 PI3K-Akt signaling pathway	GO:00055 15	ko04151 PI3K- Akt signaling pathway		
gmo-miR-130b	K02583	1,0461 E-125	NGFR	ENSGMOG0 0000017002	ENSDARG00 000057143	ko04151 PI3K-Akt signaling pathway	GO:00055 15	ko04151 PI3K- Akt signaling pathway		

gmo-miR-9			ric8a	ENSGMOG0000017080	ENSDARG0000007247					
gmo-miR-206	K12471	0,0050402	tpra1	ENSGMOG0000017122	ENSDARG00000054930	ko04144 Endocytosis				
gmo-miR-181a	K09188	2,78653E-12	MTF2	ENSGMOG0000017230	ENSDARG00000005590	ko00310 Lysine degradation	GO:0005515	ko00310 Lysine degradation		
gmo-miR-181a	K05181	1,9726E-152	GABRB4	ENSGMOG0000017243	ENSDARG00000015530	ko04080 Neuroactive ligand-receptor interaction	GO:0006811	ko04080 Neuroactive ligand-receptor interaction		
gmo-miR-181a	K01047	1,26358E-18	ASB7	ENSGMOG0000017250	ENSDARG00000006494	ko01100 Metabolic pathways	GO:0035556	ko01100 Metabolic pathways		
gmo-miR-192	K06237	0,00134417	YPEL2	ENSGMOG0000017346	ENSDARG00000077224	ko04151 PI3K-Akt signaling pathway				
gmo-miR-9	K07199	1,3114E-106	PRKAB1	ENSGMOG0000017381	ENSDARG00000046143	ko04068 FoxO signaling pathway	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000017381,ENSGMOT00000019211,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K06254	4,55652E-27	tmeff1	ENSGMOG0000017459	ENSDARG00000056740	ko04512 ECM-receptor interaction	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000017459,ENSGMOT00000019221,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene

										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-146	K06254	4,5565 2E-27	tmeff1	ENSGMOG0 0000017459	ENSDARG00 000056740	ko04512 ECM- receptor interaction	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000017459,ENSGMOT00000019221, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-146	K10447	7,9179 9E-25	KBTBD4	ENSGMOG0 0000017530	ENSDARG00 000069271	ko04120 Ubiquitin mediated proteolysis	GO:00055 15	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000017530,ENSGMOT00000019298, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K13811	0	Papss1	ENSGMOG0 0000017531	ENSDARG00 000057099	ko01100 Metabolic pathways	GO:00047 81	sulfate adenylyltransfe rase (ATP) activity	MF	Catalysis of the reaction: ATP + sulfate = diphosphate + adenylylsulfate." [EC:2.7.7.4],IEA,MF ENSGMOG00000017531,ENSGMOT00000019312, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-206	K13811	0	Papss1	ENSGMOG0000017531	ENSDARG0000057099	ko01100 Metabolic pathways	GO:0004781	sulfate adenylyltransferase (ATP) activity	MF	Catalysis of the reaction: ATP + sulfate = diphosphate + adenylylsulfate." [EC:2.7.7.4],IEA,MF ENSGMOG00000017531,ENSGMOT00000019312,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K12316	0	Gaa	ENSGMOG0000017542	ENSDARG0000074282	ko01100 Metabolic pathways	GO:0016798	ko01100 Metabolic pathways		
gmo-miR-9	K10500	1,0824 6E-66	Znf710	ENSGMOG0000017555	ENSDARG0000005549	ko04110 Cell cycle	GO:0003676	nucleic acid binding	MF	Interacting selectively and non-covalently with any nucleic acid." [GOC:jl],IEA,MF ENSGMOG00000017555,ENSGMOT00000019326,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-206	K01183	3,7167 5E-05	chid1	ENSGMOG0000017597	ENSDARG0000069673	ko01110 Biosynthesis of secondary metabolites	GO:0004553	hydrolase activity, hydrolyzing O-glycosyl compounds	MF	Catalysis of the hydrolysis of any O-glycosyl bond." [GOC:mah],IEA,MF ENSGMOG00000017597,ENSGMOT00000019384,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-130b	K08023	1,0644 7E-13	Creld1	ENSGMOG0000017600	ENSDARG0000006990		GO:0005515			
gmo-miR-9	K06591	0	ITGB8	ENSGMOG0000017668	ENSDARG0000028222	ko04151 PI3K-Akt signaling pathway	GO:0046872	ko04151 PI3K-Akt signaling pathway		

gmo-miR-130b	K06591	0	ITGB8	ENSGMOG0000017668	ENSDARG0000028222	ko04151 PI3K-Akt signaling pathway	GO:0046872	ko04151 PI3K-Akt signaling pathway		
gmo-miR-206	K06591	0	ITGB8	ENSGMOG0000017668	ENSDARG0000028222	ko04151 PI3K-Akt signaling pathway	GO:0046872	ko04151 PI3K-Akt signaling pathway		
gmo-miR-181a	K06236	1,4778 1E-05	Smarcd2	ENSGMOG0000017708	ENSDARG0000088877	ko04151 PI3K-Akt signaling pathway		ko04151 PI3K-Akt signaling pathway		
gmo-miR-11240	K13577	4,3327 E-48	Slc25a11	ENSGMOG0000017735	ENSDARG0000035741	ko04964 Proximal tubule bicarbonate reclamation				
gmo-miR-181a	K04288	5,4278 E-112	S1pr1	ENSGMOG0000017756	ENSXMAG0000019815	ko04068 FoxO signaling pathway	GO:0004930	ko04068 FoxO signaling pathway		
gmo-miR-181a	K08131	4,1829 4E-05	Mkl1	ENSGMOG0000017784	ENSDARG0000075867	ko04974 Protein digestion and absorption		ko04974 Protein digestion and absorption		
gmo-miR-206	K04648	4,7534 4E-15	CLIP1	ENSGMOG0000017829	ENSDARG0000079483	ko04962 Vasopressin-regulated water reabsorption				
gmo-miR-181a	K05863	9,2618 5E-25	SLC25A2 2	ENSGMOG0000017830	ENSDARG0000020718	ko04022 cGMP-PKG signaling pathway		ko04022 cGMP-PKG signaling pathway		
gmo-miR-181a	K09295	7,1131 7E-09	hoxc12a	ENSGMOG0000017864	ENSDARG0000046043		GO:0003677	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA (deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]

gmo-miR-206	K09295	7,1131 7E-09	hoxc12a	ENSGMOG0 0000017864	ENSDARG00 000046043		GO:00036 77	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA (deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]
gmo-miR-206	K07594	1,9599 6E-23	hoxc5a	ENSGMOG0 0000017901	ENSDARG00 000070340	ko04911 Insulin secretion	GO:00010 71	nucleic acid binding transcription factor activity	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-181a	K06496	5,6343 1E-96	Selp	ENSGMOG0 0000017933	ENSDARG00 000042138	ko04514 Cell adhesion molecules (CAMs)		ko04514 Cell adhesion molecules (CAMs)		
gmo-miR-181a	K04434	2,7635 2E-95	Mapk8ip 1	ENSGMOG0 0000017952	ENSDARG00 000091191	ko04010 MAPK signaling pathway	GO:00055 15	ko04010 MAPK signaling pathway		
gmo-miR-206	K12478	0,0030 0851	CCDC90A	ENSGMOG0 0000017965	ENSDARG00 000016964	ko04144 Endocytosis				
gmo-miR-206	K12399	5,9017 E-11	COPZ1	ENSGMOG0 0000017991	ENSDARG00 000017844	ko04142 Lysosome	GO:00020 88	lens development in camera-type eye	BF	The process whose specific outcome is the progression of the lens over time, from its formation to the mature structure. The lens is a transparent structure in the eye through which light is focused onto the retina. An example of this process is found in <i>Mus musculus</i> . [GOC:dph, ISBN:0582064333]
gmo-miR-9			Klf2	ENSGMOG0 0000018056	ENSDARG00 000038792		GO:00468 72	metal ion binding	MF	Interacting selectively and non-covalently with any metal ion." [GOC:ai],IEA,MF ENSGMOG00000018056,ENSGMOT00000019909, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]

gmo-miR-206	K09063	5,3442 5E-79	Tcf4	ENSGMOG0 0000018104	ENSDARG00 000087652	ko04550 Signaling pathways regulating pluripotency of stem cells	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-146	K04372	0	mknk1	ENSGMOG0 0000018201	ENSDARG00 000018411	ko04010 MAPK signaling pathway	GO:00036 74	MF	MF	Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K05760	6,6506 1E-42	Ldb3	ENSGMOG0 0000018212	ENSDARG00 000056322	ko04510 Focal adhesion	GO:00055 15	ko04510 Focal adhesion		
gmo-miR-19a	K11428	4,9492 E-102	setd8a	ENSGMOG0 0000018221	ENSDARG00 000068319	ko00310 Lysine degradation	GO:00180 24	ko00310 Lysine degradation		
gmo-miR-206	K12478	9,0608 5E-05	CCDC93	ENSGMOG0 0000018223	ENSDARG00 000040678	ko04144 Endocytosis				
gmo-miR-206			MOBKL2 C	ENSGMOG0 0000018227	ENSDARG00 000043705					
gmo-miR-181a	K10247	2,5663 E-164	ELOVL1	ENSGMOG0 0000018234	ENSDARG00 000058356	ko00062 Fatty acid elongation	GO:00160 21	ko00062 Fatty acid elongation		
gmo-miR-19a	K02183	3,6185 6E-14	EFCAB7	ENSGMOG0 0000018277	ENSDARG00 000020279	ko04015 Rap1 signaling pathway	GO:00055 09	ko04015 Rap1 signaling pathway		
gmo-miR-181a	K00252	0	GCDH	ENSGMOG0 0000018332	ENSDARG00 000037057	ko01100 Metabolic pathways	GO:00039 95	ko01100 Metabolic pathways		
gmo-miR-146			TM9SF4	ENSGMOG0 0000018361	ENSDARG00 000002536		GO:00160 21	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no



										exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-206			TM9SF4	ENSGMOG0000018361	ENSDARG0000002536		GO:0016021	integral component of membrane	CC	The component of a membrane consisting of gene products and protein complexes that have some part that penetrates at least one leaflet of the membrane bilayer. This component includes gene products that are buried in the bilayer with no exposure outside the bilayer. [GOC:dos, GOC:go_curators]
gmo-miR-206	K02148	0	atp6v1c1a	ENSGMOG0000018397	ENSDARG0000023967	ko01100 Metabolic pathways	GO:0015078	hydrogen ion transmembrane transporter activity	MF	Catalysis of the transfer of hydrogen ions from one side of a membrane to the other." [GOC:ai],IEA,MF ENSGMOT0000020280, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a	K13375	9,9789 E-137	tgfb1	ENSGMOG0000018401	ENSDARG0000041502	ko04010 MAPK signaling pathway	GO:0040007	ko04010 MAPK signaling pathway	BF	The increase in size or mass of an entire organism, a part of an organism or a cell. [GOC:bf, GOC:ma]
gmo-miR-206	K13375	9,9789 E-137	tgfb1	ENSGMOG0000018401	ENSDARG0000041502	ko04010 MAPK signaling pathway	GO:0040007	ko04010 MAPK signaling pathway	BF	The increase in size or mass of an entire organism, a part of an organism or a cell. [GOC:bf, GOC:ma]
gmo-miR-9	K01581	1,5207 E-125	AZIN1	ENSGMOG0000018418	ENSDARG0000052789	ko01100 Metabolic pathways	GO:0003824	catalytic activity	MF	Catalysis of a biochemical reaction at physiological temperatures. In biologically catalyzed reactions, the reactants are known as substrates, and the catalysts are naturally occurring macromolecular substances known as enzymes. Enzymes possess specific binding sites for substrates, and are usually composed wholly or largely of protein, but RNA that has catalytic activity (ribozyme) is often also regarded as enzymatic. [ISBN:0198506732]

gmo-miR-19a			dda1	ENSGMOG0000018498	ENSDARG0000076074					
gmo-miR-9	K03875	4,4546 3E-10	Fbxl16	ENSGMOG0000018540	ENSDARG0000060915	ko04120 Ubiquitin mediated proteolysis	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000018540,ENSGMOT00000020429,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-19a			C24G6.8	ENSGMOG0000018615	ENSDARG0000089886		GO:0004045			
gmo-miR-19a	K08187	8,9317 1E-23	SLC16A9	ENSGMOG0000018672	ENSDARG0000013926	ko04919 Thyroid hormone signaling pathway	GO:0055085	ko04919 Thyroid hormone signaling pathway		
gmo-miR-130b	K08187	8,9317 1E-23	SLC16A9	ENSGMOG0000018672	ENSDARG0000013926	ko04919 Thyroid hormone signaling pathway	GO:0055085	ko04919 Thyroid hormone signaling pathway		
gmo-miR-192			prmt8b	ENSGMOG0000018750	ENSDARG0000040633					
gmo-miR-9	K04511	0	Prickle1	ENSGMOG0000018760	ENSDARG0000045694	ko04310 Wnt signaling pathway	GO:0008270	zinc ion binding	MF	Interacting selectively and non-covalently with zinc (Zn) ions." [GOC:ai],IEA,MF ENSGMOG00000018760,ENSGMOT00000020652,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene

										product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-9	K01645	2,1039 6E-13	GREM2	ENSGMOG0 0000018814	ENSDARG00 000056057	ko04310 Wnt signaling pathway				
gmo-miR-181a			Heatr5b	ENSGMOG0 0000018844	ENSDARG00 000059116		GO:00055 15			
gmo-miR-181a	K02684	0,0041 6553	ctdspl2a	ENSGMOG0 0000018902	ENSDARG00 000060586	ko01100 Metabolic pathways	GO:00055 15	ko01100 Metabolic pathways		
gmo-miR-146	K13126	1,9130 5E-16	A1CF	ENSGMOG0 0000018943	ENSDARG00 000002968	ko03013 RNA transport	GO:00036 76	nucleic acid binding	MF	Interacting selectively and non-covalently with any nucleic acid." [GOC:jl],IEA,MF ENSGMOG00000018943,ENSGMOT00000020869, GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a	K10595	0,0047 1378	DAP3	ENSGMOG0 0000018965	ENSDARG00 000078500	ko04120 Ubiquitin mediated proteolysis	GO:00016 66	ko04120 Ubiquitin mediated proteolysis		
gmo-miR-206	K07595	4,4094 4E-68	MAFA	ENSGMOG0 0000018976	ENSDARG00 000017121		GO:00036 77	DNA binding	MF	Any molecular function by which a gene product interacts selectively and non-covalently with DNA (deoxyribonucleic acid). [GOC:dph, GOC:jl, GOC:tb, GOC:vw]
gmo-miR-206	K06109	1,0453 E-103	Rab13	ENSGMOG0 0000019023	ENSDARG00 000034771	ko04530 Tight junction	GO:00055 25	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR-146	K06067	0	hdac1-b	ENSGMOG0 0000019056	ENSDARG00 000015427	ko04110 Cell cycle	GO:00044 07	histone deacetylase activity	MF	Catalysis of the reaction: histone N6-acetyl-L- lysine + H2O = histone L-lysine + acetate. This reaction represents the removal of an acetyl group from a histone, a class of proteins complexed to DNA in chromatin and chromosomes. [EC:3.5.1.-, PMID:9893272]

gmo-miR-130b	K12041	2,2216 4E-62	nl BL_O RD_ID 4 12922	ENSGMOG0 0000019067	ENSDARG00 000020699		GO:00153 85			
gmo-miR-19a	K07887	2,2974 7E-35	RAB6A	ENSGMOG0 0000019073		ko04144 Endocytosis	GO:00055 25	ko04144 Endocytosis		
gmo-miR-181a	K07887	2,2974 7E-35	RAB6A	ENSGMOG0 0000019073		ko04144 Endocytosis	GO:00055 25	ko04144 Endocytosis		
gmo-miR-9	K08367	7,342E- 136	RUNX3	ENSGMOG0 0000019132	ENSDARG00 000052826		GO:00010 71	nucleic acid binding transcription factor activity	BF	Any process that modulates the frequency, rate or extent of cellular DNA-templated transcription. [GOC:go_curators, GOC:txnOH]
gmo-miR-181a			Tmem50 a	ENSGMOG0 0000019167	ENSDARG00 000015757					
gmo-miR-19a			RLBP1	ENSGMOG0 0000019212	ENSDARG00 000045808		GO:00076 34			
gmo-miR-19a	K04554	2,8588 E-140	UBE2J2	ENSGMOG0 0000019396	ENSDARG00 000061161	ko04141 Protein processing in endoplasmic reticulum		ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-130b	K04554	2,8588 E-140	UBE2J2	ENSGMOG0 0000019396	ENSDARG00 000061161	ko04141 Protein processing in endoplasmic reticulum		ko04141 Protein processing in endoplasmic reticulum		
gmo-miR-130b	K09189	3,6892 7E-07	Phf13	ENSGMOG0 0000019431	ENSDARG00 000078021	ko00310 Lysine degradation	GO:00055 15	ko00310 Lysine degradation		
gmo-miR-192	K07374	0	tuba	ENSGMOG0 0000019479	WBGENE00 003175	ko04145 Phagosome	GO:00055 25	GTP binding	MF	Interacting selectively and non-covalently with GTP, guanosine triphosphate. [GOC:ai]
gmo-miR-19a	K13302	0	sgk1	ENSGMOG0 0000019495	ENSDARG00 000025522	ko04151 PI3K-Akt signaling pathway	GO:00046 72	ko04151 PI3K- Akt signaling pathway		

gmo-miR-11240			Cryba1	ENSGMOG0000019586	ENSDARG0000014803					
gmo-miR-9	K06260	2,3770 7E-45	Igfals	ENSGMOG0000019723	ENSDARG0000037836	ko04611 Platelet activation	GO:0005515	protein binding	MF	Interacting selectively and non-covalently with any protein or protein complex (a complex of two or more proteins that may include other nonprotein molecules)." [GOC:go_curators],IEA,MF ENSGMOG00000019723,ENSGMOT00000021728,GO:0003674,MF,"Elemental activities, such as catalysis or binding, describing the actions of a gene product at the molecular level. A given gene product may exhibit one or more molecular functions. [GOC:go_curators]
gmo-miR-181a			Tmem100	ENSGMOG0000019877	ENSG00000166292					
gmo-miR-146	K07523	5,8632 7E-25	LRRN3	ENSGMOG0000019944	ENSDARG0000089923	ko04360 Axon guidance				
gmo-miR-9			Tmem22	ENSGMOG0000019967	ENSDARG0000045447		GO:0016020	membrane protein	CC	Double layer of lipid molecules that encloses all cells, and, in eukaryotes, many organelles; may be a single or double lipid bilayer; also includes associated proteins. [GOC:mah, ISBN:0815316194]
gmo-miR-19a			Tmem22	ENSGMOG0000019967	ENSDARG0000045447		GO:0016020	membrane protein	CC	Double layer of lipid molecules that encloses all cells, and, in eukaryotes, many organelles; may be a single or double lipid bilayer; also includes associated proteins. [GOC:mah, ISBN:0815316194]
gmo-miR-181a	K06087	8,6650 8E-70	CLDN3	ENSGMOG0000020245	ENSDARG0000069503	ko04530 Tight junction	GO:0016021	ko04530 Tight junction		
gmo-miR-9	K14284	5,3979 E-26	tmem223	ENSGMOG0000020259	ENSDARG0000069494	ko03013 RNA transport				
gmo-miR-9	K07809	1,205E-119	Hs3st6	ENSGMOG0000020439	ENSDARG0000059948	ko00534 Glycosaminoglycan biosynthesis - heparan sulfate / heparin	GO:0008146	sulfotransferase activity	MF	Catalysis of the transfer of a sulfate group from 3'-phosphoadenosine 5'-phosphosulfate to the hydroxyl group of an acceptor, producing the sulfated derivative and 3'-phosphoadenosine 5'-phosphate. [EC:2.8.2, GOC:curators]

gmo-miR-192	K01017	6,0382 1E-69	Chst8	ENSGMOG0 0000020446	ko00532 Glycosaminoglyca n biosynthesis - chondroitin sulfate / dermatan sulfate	GO:00081 46	sulfotransferas e activity	MF	Catalysis of the transfer of a sulfate group from 3'-phosphoadenosine 5'-phosphosulfate to the hydroxyl group of an acceptor, producing the sulfated derivative and 3'-phosphoadenosine 5'-phosphate. [EC:2.8.2, GOC:curators]
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