

Supplementary Dataset 1

Modulated microRNA predicted gene targets in PI3K-Akt signaling pathway*

| MIRNA | Number of Genes Targeted | Genes |
|-------------------|--------------------------|--|
| mmu-miR-28-3p | 2 | Ywhah, Foxo3 |
| mmu-miR-30c-1-3p | 3 | Gsk3b, Gng7, Thbs3 |
| mmu-miR-376c-3p | 2 | Ppp2r5a, Itgb8 |
| mmu-miR-135b-5p | 10 | Gsk3b, Ptk2, Pik3r2, Fgf11, Creb5, Prlr, Pik3cd, Ppp2r5c, Col5a1, Myc |
| mmu-miR-466b-3p | 18 | Mapk1, Pdpk1, Tlrl4, Gsk3b, Pdgfc, Ywhag, Spp1, Itga2, Igf1, Creb1, Phlpp2, Irs1, Pdgfd, Vegfa, Col24a1, Fgf2, Pdgfra, Itgb8 |
| mmu-miR-350-3p | 10 | Prkaa2, Pik3r3, Creb1, Ywhab, Them4, Ghr, Sos1, Col1a2, Ikbkg, Pdgfra |
| mmu-miR-149-5p | 7 | Ywhaz, Pdgfc, Fasl, Phlpp2, Brca1, Crtc2, Pdgfra |
| mmu-miR-486-5p | 3 | Pik3r1, Pdpk1, Pten |
| mmu-miR-214-3p | 15 | Pdpk1, |
| mmu-miR-27b-5p | 2 | Sos2, Pik3cg |
| mmu-miR-93-3p | 2 | Mapk1, Gnb1 |
| mmu-miR-467e-5p | 1 | Pdgfd |
| mmu-miR-7b-5p | 7 | Rps6kb1, Ddit4, Il2ra, Chrm1, Col1a2,, Sg1, Pik3cd |
| mmu-miR-132-3p | 8 | Mapk1, Gnb1, Sos1, Foxo3, Col5a2, Pten, Itgb8, Itga9 |
| mmu-miR-466a-3p | 22 | Mapk1, Pik3r1, Pdpk1, Gsk3b, Itga2, Fgf4, Irs1, Pdgfd, Vegfa, Gng2, Prkaa1, Chuk, Fgf2, Itgb1, Bcl2l11, Pdgfra, Pten, Pik3cd, Itgb8, Col5a1, Pkn2, Kit |
| mmu-miR-7a-1-3p | 22 | Pik3r1, Itga6, Thbs1, Igf1, Phlpp1, Ccne2, Creb1, Gng2, Casp9, Thbs2, Fgf13, Kras, Angpt1, Sos1, Pik3cb, Itgav, Ppp2r3c, Pdgfra, Pten, Myb, Met, Cdk2 |
| mmu-miR-381-3p | 19 | Flt1, Pdpk1, Gsk3b, Pdgfc, Rps6kb1, Ppp2r2a, Thbs1, Lpar6, Ppp2r5c, Vegfa, Fgf13, Col1a2, Col4a1, Fgf2, Col11a1, Pten, Atf2, Met, Ppp2r5c |
| mmu-miR-22-5p | 3 | Map2k1, Il2ra, Ppp2r5c |
| mmu-let-7f-5p | 20 | Prkaa2, Tsc1, Bcl2l1, Col3a1, Thbs1, Insr, Ngf, Fgf11, Col1a1, Col27a1, Chrm1, Prlr, Ghr, Nras, Col5a2, Osmr, Col24a1, Col1a2, Il6, Rps6kb2 |
| mmu-miR-423-5p | 3 | Cdkn1a, Thbs3, Angpt4 |
| mmu-miR-375-3p | 8 | Tsc1, Lpar4, Pdpk1, Kdr, Ppp2r2a, Prlr, Itga8, Pik3ca, |
| mmu-miR-351-5p | 6 | Prkaa2, Lpar4, Il7r, Ppp2ca, Mcl1, Itga9 |
| mmu-miR-193b-3p | 6 | Sos2, Ywhaz, Fgf1, Ppp2ca, Pten, Kit |
| mmu-miR-18a-3p | 2 | Creb1, Efnal |
| mmu-miR-191-3p | 1 | Bcl2l1 |
| mmu-miR-17-3p | 8 | Tsc1, Eif4e2, Ywhag, Ppp2ca, Ywhaq, Bcl2l11, Itgb8, Atf2 |
| mmu-miR-671-3p | 2 | Rbl2, Rps6kb2 |
| mmu-miR-30b-3p | 4 | Rps6kb1, Chrm1, Prlr, Col5a2 |
| mmu-miR-741-3p | 11 | Fgf10, Creb3l2, Ywhag,, Fgf7 Ppp2r2a, Igf1, Phlpp2, Vegfa, Fgf13, Prkca, Lpar3 |
| mmu-miR-27a-5p | 1 | Il2 |
| mmu-miR-467b-3p | 20 | Mapk1, Pik3r1, Gsk3b, Itga2, Grb2, Ppp2r5c, Vegfa, Gng2, Ppp2ca, Osm, Gngt1, Fgf16, Itgb1, Col11a1, Bcl2l11, Pten, Met, Col5a1, Pkn2, Kit |
| mmu-miR-878-3p | 2 | Ywhag, Hsp90b1 |
| mmu-miR-150-5p | 8 | Pik3r1, Gsk3b, Col1a1, Them4, Ghr, Osmr, Fgf2, Myb |
| mmu-miR-328-3p | 4 | Ywhaz, Csf1r, Itga5, Rptor |
| mmu-miR-705 | 2 | Tsc1, Col27a1 |
| mmu-miR-99b-3p | 1 | Gsk3b |
| mmu-miR-425-5p | 4 | Map2k1, Igf1, Pik3ca, Pten |
| mmu-miR-294-3p | 14 | Fgf10, Ppp2r2a, Creb1, Phlpp2, Cdkn1a, Rbl2, Atf6b, Fgf9, Crtc2, Mcl1, Pten, Itgb8, Col4a2, Pkn2 |
| mmu-miR-295-3p | 13 | Ppp2r2a, Creb1, Phlpp2, Cdkn1a, Rbl2, Atf6b, Fgf9, Crtc2, Mcl1, Pten, Itgb8, Col4a2, Pkn2 |
| mmu-miR-465a-3p | 1 | Pik3r1 |
| mmu-miR-181a-5p | 14 | Mapk1, Pik3r3, Rps6kb1, Ywhag, Map2k1, Creb1, Sos1, Itgb1, Bcl2l11, Pdgfra, Akt3, Pten, Itgb8, Hsp90b1 |
| mmu-miR-877-3p | 3 | Itgb3, Rptor, Lamb1 |
| mmu-let-7b-5p | 20 | Prkaa2, Tsl, Bcl2l1, Col3a1, Thbs1, Insr, Ngf, Col1a1, Col27a1, Chrm1, Prlr, Ghr, Nras, Col5a2, Osmr, Col24a1, Col1a2, Il6, Rps6kb2, Col4a2 |
| mmu-let-7a-5p | 20 | Prkaa2, Tsc1, Bcl2l1, Col3a1, Thbs1, Insr, Ngf, Col1a1, Col27a1,, Chrm1 Prlr, Ghr, Nras, Col5a2, Osmr, Col24a1, Col1a2, Il6, Rps6kb2, Col4a2 |
| mmu-miR-463-5p | 1 | Myb |
| mmu-miR-92a-3p | 22 | Prkaa2, Tsc1, Creb3l2, Ibsp, Pik3r3, Rps6kb1, Ddit4, Fasl, Col27a1, Phlpp2, Itga5, Sgk3, Prkaa1, Itga8, Pik3ca, Pik3cb, Itgav, Col1a2, Bcl2l11, Sgk1, Pten, Col5a1 |
| mmu-miR-877-5p | 1 | Itga8 |
| mmu-miR-135a-1-3p | 2 | Fgf15, Pten |
| mmu-miR-200a-3p | 11 | Prkaa2, Ywhag, Ccne2, Grb2, Phlpp2, Rheb, Gng5, Pdgfra, Eph2, Pten, Efnal |
| mmu-miR-181c-5p | 13 | Mapk1, Pik3r3, Rps6kb1, Ywhag, Map2k1, Creb1, Itgb1, Bcl2l11, Pdgfra, Akt3, Pten, Itgb8, Hsp90b1 |
| mmu-miR-883b-3p | 6 | Ywhag, Ywhab, Ppp2r5a, Itgb1, Pten, Atf2 |
| mmu-miR-139-5p | 9 | Gnb1, Eif4b, Ppp2ca, Gnb4, Ywhaq, Gng5, Itgb8, Ppp2r5c, Col5a1 |
| mmu-miR-409-3p | 5 | G6pc, Igf1, Ywhab, Ppp2ca, Fgf9 |
| mmu-miR-200a-5p | 4 | Gnb1, Ppp2ca, Fgf13, Sgk1 |

* Diana micro-T-CSD algorithm was used to predict the miRNA target Genes. Diana Mirpath software was used to identify significantly modulated KEGG pathways of the miRNA target genes. (34: Vlachos, I. S., N. Kostoulas, T. Vergoulis, G. Georgakilas, M. Reczko, M. Maragkakis, M. D. Paraskevopoulou, K. Prionidis, T. Dalamagas, and A. G. Hatzigeorgiou. 2012. DIANA miRPath v 2.0: investigating the combinatorial effect of microRNAs in pathways. Nucleic acids research 40:W498-504.)

Supplementary Dataset 1

Modulated microRNA predicted gene targets in Jak-STAT signaling pathway*

| MiRNA | Number of Genes Targeted | Genes |
|------------------|--------------------------|--|
| mmu-miR-376c-3p | 1 | Spry2 |
| mmu-miR-135b-5p | 7 | Clcf1, Pik3r2, Socs4, Prlr, Pik3cd, Myc, Stat6 |
| mmu-miR-466b-3p | 3 | Il21, Pias1, Spred2 |
| mmu-miR-350-3p | 8 | Pik3r3, Spry4, Lifr, Il21, Ghr, Spred1, Sos1, Spry2 |
| mmu-miR-486-5p | 1 | Pik3r1 |
| mmu-miR-214-3p | 5 | Cbl, Spry4, Il10rb, Socs7, Akt3 |
| mmu-miR-27b-5p | 2 | Sos2, Pik3cg |
| mmu-miR-7b-5p | 3 | Il2ra, Pias1, Pik3cd |
| mmu-miR-29b-1-5p | 1 | Stat4 |
| mmu-miR-132-3p | 3 | Spry1, Spred1, Sos1 |
| mmu-miR-466a-3p | 9 | Pik3r1, Spry1, Il21, Spred1, Pias1, Spry2, Cntfr, Spred2, Pik3cd |
| mmu-miR-7a-1-3p | 6 | Pik3r1, Socs4, Sos1, Pias1, Pik3cb, Pias2 |
| mmu-miR-381-3p | 6 | Spry1, Clcf1, Spred1, Pias1, Spry2, Socs5 |
| mmu-miR-22-5p | 4 | Il2ra, Lepr, Socs7, Socs5 |
| mmu-let-7f-5p | 6 | Bcl2l1, Prlr, Ghr, Il10, Osmr, Il6 |
| mmu-miR-375-3p | 3 | Prlr, Pik3ca, Socs5 |
| mmu-miR-351-5p | 1 | Il7r |
| mmu-miR-193b-3p | 1 | Sos2 |
| mmu-miR-18a-3p | 2 | Cblb, Stat3 |
| mmu-miR-191-3p | 1 | Bcl2l1 |
| mmu-miR-17-3p | 2 | Socs7, Spred2 |
| mmu-miR-30b-3p | 1 | Prlr |
| mmu-miR-741-3p | 2 | Il12rb2, Csf2rb2 |
| mmu-miR-27a-5p | 1 | Il2 |
| mmu-miR-467b-3p | 8 | Pik3r1, Spry1, Grb2, Spred1, Pias1, Osm, Spry2, Cntfr |
| mmu-miR-878-3p | 1 | Lifr |
| mmu-miR-150-5p | 4 | Pik3r1, Stat5b, Ghr, Osmr |
| mmu-miR-425-5p | 2 | Lifr, Pik3ca |
| mmu-miR-294-3p | 2 | Irf9, Il28ra |
| mmu-miR-295-3p | 2 | Irf9, Il28ra |
| mmu-miR-582-3p | 1 | Spred1 |
| mmu-miR-465a-3p | 1 | Pik3r1 |
| mmu-miR-181a-5p | 6 | Pik3r3, Cblb, Lif, Spry4, Sos1, Akt3 |
| mmu-miR-877-3p | 3 | Socs2, Tpo, Il13ra1 |
| mmu-let-7b-5p | 8 | Bcl2l1, Il13, Cish, Prlr, Ghr, Il10, Osmr, Il6 |
| mmu-let-7a-5p | 8 | Bcl2l1, Il13, Cish, Prlr, Ghr, Il10, Osmr, Il6 |
| mmu-miR-92a-3p | 3 | Pik3r3, Pik3ca, Pik3cb |
| mmu-miR-200a-3p | 4 | Stat5b, Spry4, Stat5a, Grb2 |
| mmu-miR-181c-5p | 6 | Pik3r3, Cblb, Lif, Spry4, Spred1, Akt3 |
| mmu-miR-883b-3p | 3 | Cblb, Lif, Socs5 |
| mmu-miR-139-5p | 1 | Socs7 |

* Diana micro-T-CSD algorithm was used to predict the miRNA target Genes. Diana Mirpath software was used to identify significantly modulated KEGG pathways of the miRNA target genes. (34: Vlachos, I. S., N. Kostoulas, T. Vergoulis, G. Georgakilas, M. Reczko, M. Maragkakis, M. D. Paraskevopoulou, K. Prionidis, T. Dalamagas, and A. G. Hatzigeorgiou. 2012. DIANA miRPath v.2.0: investigating the combinatorial effect of microRNAs in pathways. Nucleic acids research 40:W498-504.)

Supplementary Dataset 1

Modulated microRNA predicted gene targets in MAPK signaling pathway*

| MiRNA | Number of Genes Targeted | Genes |
|-------------------|--------------------------|---|
| mmu-miR-28-3p | 2 | Fos, Cacna1g |
| mmu-miR-30c-1-3p | 4 | Map3k3, Il1r1, Map4k1, Ptprr |
| mmu-miR-376c-3p | 7 | Rasa2, Mef2c, Bdnf, Rapgef2, Cacna1g, Cacna2d1, Map3k8 |
| mmu-miR-135b-5p | 6 | Mef2c, Rps6ka5, Fgf1, Ntrk2, Cacna1d, Myc |
| mmu-miR-466b-3p | 13 | Mapk, Rasa2, Mef2c, Jun, Max, Cacna1b, Taok1, Map3k4, Nlk, Il1a, Fgfr2, Pdgfra, Ptprr |
| mmu-miR-350-3p | 15 | Rasgrp1, Stmn1, Bdnf, Map2k3, Cacnb4, Ppm1b, Map2k4, Cacna2d1, Mecom, Sos1, Dusp10, Stk4, Ppp3r1, Ikbkg, Pdgfra |
| mmu-miR-149-5p | 4 | Rap1a, Fasl, Flna, Pdgfra |
| mmu-miR-486-5p | 4 | Nf1, Ptpn7, Stk4, Map3k7 |
| mmu-miR-214-3p | 18 | Mef2c, Fgf14, Ikbkb, Hspb1, Fgf20, Ppm1a, Cacnb1, Fgfr1, Cacna2d1, Nras, Rasa1, Ntkb1, Fgf3, Flna, Akt3, Pak2, Nfatc2, Mapk8 |
| mmu-miR-27b-5p | 1 | Sos2 |
| mmu-miR-93-3p | 4 | Mapk1, Ntrk2, Flna, Rps6ka2 |
| mmu-miR-467c-5p | 2 | Taok3, Cdc25b |
| mmu-miR-7b-5p | 4 | Braf, Mecom, Cacng7, Arrb1 |
| mmu-miR-132-3p | 10 | Mapk1, Cacnb4, Nlk, Dusp9, Rasgrp3, Sos1, Cacng2, Rras2, Mapkapk2, Cacna1c |
| mmu-miR-466a-3p | 18 | Rasgrp1, Mapk1, Rasa2, Mef2c, Bdnf, Cacna1b, Fgf4, Taok1, Rps6ka3, Ntrk2, Cacna1g, Chuk, Dusp10, Fgfr2, Pdgfra, Ptprr, Cdc42, Tab2 |
| mmu-miR-7a-1-3p | 18 | Bdnf, Cacnb4, Rapgef2, Ntrk2, Ppp3cb, Prkx, Fgf13, Kras, Sos1, Rap1b, Rras2, Dusp10, Map3k5, Ppp3r1, Ppp3ca, Pdgfra, Cdc42, B230120H23Rik |
| mmu-miR-381-3p | 17 | Mef2c, Bdnf, Taok1, Rps6ka3, Ntrk2, Nf1, Fgf13, Cacna2d1, Rap1b, Rras2, Crk, 1500003O03Rik, Fgfr2, Ppp3ca, Cacna1c, Atf2, Cdc42 |
| mmu-miR-15b-3p | 1 | Mecom |
| mmu-miR-22-5p | 6 | Tgfb2, Rap1a, Map2k1, Cacng2, Rap1b, Elk1 |
| mmu-let-7f-5p | 11 | Map4k3, Map4k4, Ngf, Fgf11, Tgfb1, Nras, Map4k2, Dusp4, Flna, Dusp1, Mapk8 |
| mmu-miR-423-5p | 1 | Mras |
| mmu-miR-375-3p | 5 | Bdnf, Cacna2d1, Cacng2, Map3k5, Cacna1a |
| mmu-miR-351-5p | 9 | Mapk12, Rap1a, Rps6ka1, Cacnb1, Dusp7, Map2k7, Map4k2, Traf6, Map3k11 |
| mmu-miR-193b-3p | 5 | Sos2, Max, Fgf1, Rapgef2, Dusp7 |
| mmu-miR-331-3p | 1 | Cacnb1 |
| mmu-miR-18a-3p | 1 | Mapt |
| mmu-miR-191-3p | 3 | Fos, Rapgef2, Nlk |
| mmu-miR-17-3p | 2 | Map4k2, Atf2 |
| mmu-miR-296-5p | 1 | Srf |
| mmu-miR-30b-3p | 2 | Cacna2d1, Map3k8 |
| mmu-miR-741-3p | 12 | Fgf10, Taok3, Fgf7, Cacnb4, Ntrk2, Ntf5, Mapk10, Fgf13, Prkca, Pla2g4c, Ptprr, Rps6ka2 |
| mmu-miR-27a-5p | 2 | Cacna2d1, Mecom |
| mmu-miR-467b-3p | 17 | Rasgrp1, Mapk1, Rasa2, Mef2c, Bdnf, Cacna1b, Taok1, Rps6ka3, Grb2, Ntrk2, Cacna1g, Cacna2d1, Rap1b, Dusp10, Fgf16, Ptprr, Tab2 |
| mmu-miR-878-3p | 1 | Mef2c |
| mmu-miR-150-5p | 4 | Ppp3r2, Cacna1g, Fgfr2, Srf |
| mmu-miR-328-3p | 3 | Max, Cacng2, Flna |
| mmu-miR-705 | 3 | Prkcg, Map3k13, Dusp8 |
| mmu-miR-425-5p | 2 | Bdnf, Map2k1 |
| mmu-miR-294-3p | 11 | Fgf10, Mef2c, Rps6ka5, Rps6ka1, Mknk2, Dusp2, Tgfb2, Elk4, Fgf9, Ppp3r1, Map3k11 |
| mmu-miR-295-3p | 13 | Mef2c, Rps6ka5, Map3k12, Rps6ka1, Mknk2, Dusp2, Rps6ka3, Tgfb2, Crk, Elk4, Fgf9, Ppp3r1, Map3k11 |
| mmu-miR-582-3p | 1 | Rps6ka3 |
| mmu-miR-181a-5p | 16 | Mapk1, Map2k1, Taok1, Fos, Rps6ka3, Nlk, Tgfb1, Il1a, Braf, Sos1, Rap1b, Rras2, Tnf, Ppp3r1, Pdgfra, Akt3 |
| mmu-let-7b-5p | 11 | Mef2c, Map4k3, Map4k4, Ngf, Tgfb1, Nras, Dusp4, Flna, Tab2, Dusp1, Mapk8 |
| mmu-let-7a-5p | 10 | Map4k3, Map4k4, Ngf, Tgfb1, Nras, Map4k2, Dusp4, Flna, Dusp1, Mapk8 |
| mmu-miR-92a-3p | 9 | Fasl, Nlk, Map2k4, Braf, Rap1b, Dusp10, Elk4, Cacna1c, B230120H23Rik |
| mmu-miR-135a-1-3p | 1 | Fgf15 |
| mmu-miR-200a-3p | 13 | Tgfb2, Map3k3, Grb2, Rapgef2, Ntrk2, Map2k4, Cacna2d1, Dusp3, Pdgfra, Prkach, Map3k7, Cdc42, Mapk8 |
| mmu-miR-181c-5p | 15 | Mapk1, Map2k1, Taok1, Fos, Rps6ka3, Nlk, Tgfb1, Il1a, Braf, Rap1b, Rras2, Tnf, Ppp3r1, Pdgfra, Akt3 |
| mmu-miR-883b-3p | 2 | Nf1, Atf2 |
| mmu-miR-139-5p | 6 | Jun, Taok1, Prkx, Cacna2d1, Rap1b, Mapk8 |
| mmu-miR-409-3p | 2 | Bdnf, Fgf9 |
| mmu-miR-200a-5p | 4 | Ppm1a, Nr4a1, Fgf13, Map3k7 |

*Diana micro-T-CSD algorithm was used to predict the miRNA target Genes. Diana Mirpath software was used to identify significantly modulated KEGG pathways of the miRNA target genes. (34: Vlachos, I. S., N. Kostoulas, T. Vergoulis, G. Georgakilas, M. Reczko, M. Maragkakis, M. D. Paraskevopoulou, K. Pionidis, T. Dalamagas, and A. G. Hatzigeorgiou. 2012. DIANA miPath v.2.0: investigating the combinatorial effect of microRNAs in pathways. Nucleic acids research 40:W498-504.)

Supplementary Dataset 1

| Modulated microRNA predicted gene targets in mTOR signaling pathway* | | |
|--|--------------------------|--|
| MiRNA | Number of Genes Targeted | Genes |
| mmu-miR-376c-3p | 1 | Hif1a |
| mmu-miR-135b-5p | 3 | Pik3r2, Hif1a, Pik3cd |
| mmu-miR-466b-3p | 6 | Mapk1, Pdpk1, Igf1, Irs1, Vegfa, Cab39 |
| mmu-miR-350-3p | 3 | Prkaa2, Pik3r3, Rictor |
| mmu-miR-486-5p | 3 | Pik3r1, Pdpk1, Pten |
| mmu-miR-214-3p | 5 | Pdpk1, Ikbkb, Pgf, Akt3, Cab39 |
| mmu-miR-27b-5p | 1 | Pik3cg |
| mmu-miR-93-3p | 3 | Mapk1, Hif1a, Rps6ka2 |
| mmu-miR-7b-5p | 4 | Rps6kb1, Ddit4, Braf, Pik3cd |
| mmu-miR-132-3p | 2 | Mapk1, Pten |
| mmu-miR-466a-3p | 10 | Mapk1, Pik3r1, Pdpk1, Rps6ka3, Irs1, Vegfa, Prkaa1, Pten, Pik3cd, Cab39 |
| mmu-miR-7a-1-3p | 6 | Pik3r1, Igf1, Hif1a, Rictor, Pik3cb, Pten |
| mmu-miR-381-3p | 9 | Pdpk1, Rps6kb1, Ulk2, Rps6ka3, Vegfa, Rictor, Rragc, Pten, Cab39 |
| mmu-miR-15b-3p | 1 | Hif1a |
| mmu-miR-22-5p | 1 | Strada |
| mmu-let-7f-5p | 4 | Prkaa2, Tsc1, Rictor, Rps6kb2 |
| mmu-miR-375-3p | 3 | Tsc1, Pdpk1, Pik3ca |
| mmu-miR-351-5p | 4 | Prkaa2, Ulk3, Rps6ka1, Strada |
| mmu-miR-193b-3p | 1 | Pten |
| mmu-miR-17-3p | 2 | Tsc1, Eif4e2 |
| mmu-miR-671-3p | 1 | Rps6kb2 |
| mmu-miR-30b-3p | 1 | Rps6kb1 |
| mmu-miR-741-3p | 5 | Igf1, Vegfa, Prkca, Strada, Rps6ka2 |
| mmu-miR-467b-3p | 7 | Mapk1, Pik3r1, Ulk2, Rps6ka3, Vegfa, Pten, Cab39 |
| mmu-miR-878-3p | 1 | Hif1a |
| mmu-miR-150-5p | 2 | Pik3r1, Ulk3 |
| mmu-miR-328-3p | 2 | Rragc, Rptor |
| mmu-miR-705 | 2 | Tsc1, Prkcg |
| mmu-miR-425-5p | 3 | Igf1, Pik3ca, Pten |
| mmu-miR-294-3p | 2 | Rps6ka1, Pten |
| mmu-miR-295-3p | 3 | Rps6ka1, Rps6ka3, Pten |
| mmu-miR-582-3p | 1 | Rps6ka3 |
| mmu-miR-465a-3p | 1 | Pik3r1 |
| mmu-miR-181a-5p | 8 | Mapk1, Pik3r3, Rps6kb1, Rps6ka3, Braf, Tnf, Akt3, Pten |
| mmu-miR-877-3p | 1 | Rptor |
| mmu-let-7b-5p | 4 | Prkaa2, Tsc1, Rictor, Rps6kb2 |
| mmu-let-7a-5p | 4 | Prkaa2, Tsc1, Rictor, Rps6kb2 |
| mmu-miR-92a-3p | 10 | Prkaa2, Tsc1, Pik3r3, Rps6kb1, Ddit4, Braf, Prkaa1, Pik3ca, Pik3cb, Pten |
| mmu-miR-135a-1-3p | 1 | Pten |
| mmu-miR-200a-3p | 5 | Prkaa2, Ulk2, Rheb, Cab39l, Pten |
| mmu-miR-181c-5p | 8 | Mapk1, Pik3r3, Rps6kb1, Rps6ka3, Braf, Tnf, Akt3, Pten |
| mmu-miR-883b-3p | 2 | Rictor, Pten |
| mmu-miR-139-5p | 1 | Eif4b |
| mmu-miR-409-3p | 1 | Igf1 |

* Diana micro-T-CSD algorithm was used to predict the miRNA target Genes. Diana Mirpath software was used to identify significantly modulated KEGG pathways of the miRNA target genes. (34: Vlachos, I. S., N. Kostoulas, T. Vergoulis, G. Georgakilas, M. Reczko, M. Maragkakis, M. D. Paraskevopoulou, K. Prionidis, T. Dalamagas, and A. G. Hatzigeorgiou. 2012. DIANA miRPath v.2.0: investigating the combinatorial effect of microRNAs in pathways. Nucleic acids research 40:W498-504.)

Supplementary Dataset 1

| Modulated microRNA predicted gene targets in NF-kappa B signaling pathway* | | |
|--|--------------------------|--|
| MiRNA | Number of Genes Targeted | Genes |
| mmu-miR-30c-1-3p | 2 | Il1r1, Cxcl12 |
| mmu-miR-135b-5p | 2 | Cd40lg, Tab3 |
| mmu-miR-466b-3p | 4 | Tlr4, Xiap, Vcam1, Cxcl2 |
| mmu-miR-350-3p | 6 | Malt1, Ptgs2, Xiap, Tab3, Ikbkg, Birc2 |
| mmu-miR-149-5p | 1 | Tirap |
| mmu-miR-486-5p | 2 | Irak4, Map3k7 |
| mmu-miR-214-3p | 5 | Ikbkb, Prkcq, Nfkb1, Traf3, Ripk1 |
| mmu-miR-93-3p | 1 | Plcg1 |
| mmu-miR-7b-5p | 3 | Tnfaip3, Tirap, Parp1 |
| mmu-miR-466a-3p | 6 | Nfkbia, Malt1, Birc3, Xiap, Chuk, Tab2 |
| mmu-miR-7a-1-3p | 1 | Xiap |
| mmu-miR-381-3p | 2 | Nfkbia, Csnk2a1 |
| mmu-miR-22-5p | 2 | Plcg1, Erc1 |
| mmu-let-7f-5p | 1 | Bcl2l1 |
| mmu-miR-423-5p | 1 | Ccl4 |
| mmu-miR-351-5p | 3 | Tnfaip3, Csnk2a1, Traf6 |
| mmu-miR-193b-3p | 1 | Plau |
| mmu-miR-191-3p | 1 | Bcl2l1 |
| mmu-miR-30b-3p | 2 | Malt1, Ticam1 |
| mmu-miR-741-3p | 2 | Tnfrsf11a, Traf3 |
| mmu-miR-467b-3p | 4 | Nfkbia, Malt1, Birc3, Tab2 |
| mmu-miR-705 | 1 | Csnk2a2 |
| mmu-miR-181a-5p | 4 | Xiap, Card11, Tab3, Tnf |
| mmu-let-7b-5p | 3 | Bcl2l1, Csnk2a1, Tab2 |
| mmu-let-7a-5p | 2 | Bcl2l1, Csnk2a1 |
| mmu-miR-92a-3p | 1 | Traf3 |
| mmu-miR-200a-3p | 2 | Cxcl12, Map3k7 |
| mmu-miR-181c-5p | 4 | Xiap, Card11, Tab3, Tnf |
| mmu-miR-139-5p | 1 | Traf3 |
| mmu-miR-200a-5p | 1 | Map3k7 |

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Supplementary Dataset 1

| Modulated microRNA predicted gene targets in Toll-like receptor signaling pathway* | | |
|--|-----------------------|---|
| MiRNA | NumberofGenesTargeted | Genes |
| mmu-miR-28-3p | 1 | Fos |
| mmu-miR-376c-3p | 1 | Map3k8 |
| mmu-miR-135b-5p | 2 | Pik3r2, Pik3cd |
| mmu-miR-466b-3p | 5 | Mapk1, Jun, Tlr4, Spp1, Cxcl10, |
| mmu-miR-350-3p | 4 | Pik3r3, Map2k3, Map2k4, Ikbkg |
| mmu-miR-149-5p | 1 | Tirap |
| mmu-miR-486-5p | 3 | Pik3r1, Irak4, Map3k7 |
| mmu-miR-214-3p | 6 | Ikbkb, Nfkb1, Traf3, Akt3, Ripk1, Mapk8 |
| mmu-miR-27b-5p | 1 | Pik3cg |
| mmu-miR-93-3p | 1 | Mapk1 |
| mmu-miR-7b-5p | 2 | Tirap, Pik3cd |
| mmu-miR-132-3p | 1 | Mapk1 |
| mmu-miR-466a-3p | 7 | Mapk1, Nfkb1a, Pik3r1, Cxcl10, Chuk, Pik3cd, Tab2 |
| mmu-miR-7a-1-3p | 2 | Pik3r1, Pik3cb |
| mmu-miR-381-3p | 2 | Nfkb1a, Tlr3 |
| mmu-miR-22-5p | 1 | Map2k1 |
| mmu-let-7f-5p | 2 | Il6, Mapk8 |
| mmu-miR-423-5p | 1 | Ccl4 |
| mmu-miR-375-3p | 1 | Pik3ca |
| mmu-miR-351-5p | 3 | Mapk12, Map2k7, Traf6 |
| mmu-miR-191-3p | 1 | Fos |
| mmu-miR-30b-3p | 2 | Map3k8, Ticam1 |
| mmu-miR-741-3p | 2 | Mapk10, Traf3 |
| mmu-miR-467b-3p | 4 | Mapk1, Nfkb1a, Pik3r1, Tab2 |
| mmu-miR-150-5p | 1 | Pik3r1 |
| mmu-miR-425-5p | 2 | Map2k1, Pik3ca |
| mmu-miR-582-3p | 1 | Tollip |
| mmu-miR-465a-3p | 1 | Pik3r1 |
| mmu-miR-181a-5p | 6 | Mapk1, Pik3r3, Map2k1, Fos, Tnf, Akt3 |
| mmu-let-7b-5p | 3 | Il6, Tab2, Mapk8 |
| mmu-let-7a-5p | 2 | Il6, Mapk8 |
| mmu-miR-92a-3p | 5 | Pik3r3, Map2k4, Pik3ca, Pik3cb, Traf3 |
| mmu-miR-200a-3p | 3 | Map2k4, Map3k7, Mapk8 |
| mmu-miR-181c-5p | 6 | Mapk1, Pik3r3, Map2k1, Fos, Tnf, Akt3 |
| mmu-miR-139-5p | 3 | Jun, Traf3, Mapk8 |
| mmu-miR-200a-5p | 1 | Map3k7 |

* Diana micro-T-CSD algorithm was used to predict the miRNA target Genes. Diana Mirpath software was used to identify significantly modulated KEGG pathways of the miRNA target genes. (34: Vlachos, I. S., N. Kostoulas, T. Vergoulis, G. Georgakilas, M. Reczko, M. Maragkakis, M. D. Paraskevopoulou, K. Prionidis, T. Dalamagas, and A. G. Hatzigeorgiou. 2012. DIANA miRPath v.2.0: investigating the combinatorial effect of microRNAs in pathways. Nucleic acids research 40:W498-504.)