**Supporting Information**

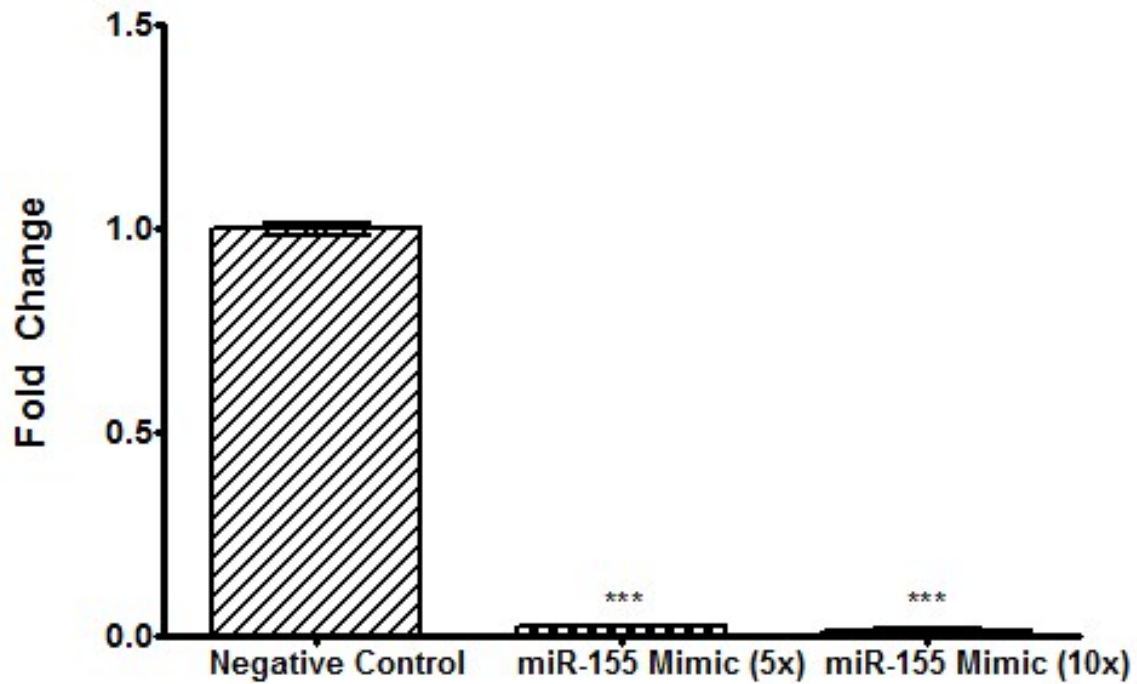Methods

**Optimization of miR-155 Mimic**

The neuronal co-cultures were seeded in 6 well plates at a cell density of 450,000 cells/well. Following seeding and overnight incubation, a miR-155-5p mimic (Thermo Fisher Scientific) was transfected into the co-cultures using the Lipofectamine® RNAiMAX™ reagent (Thermo Fisher Scientific) per manufacturer's instructions. A mimic concentration of 5x (125 pmol) and 10x (250 pmol) was used and *Tnf-α* expression was chosen to validate transfection success (per manufacturer's protocol).
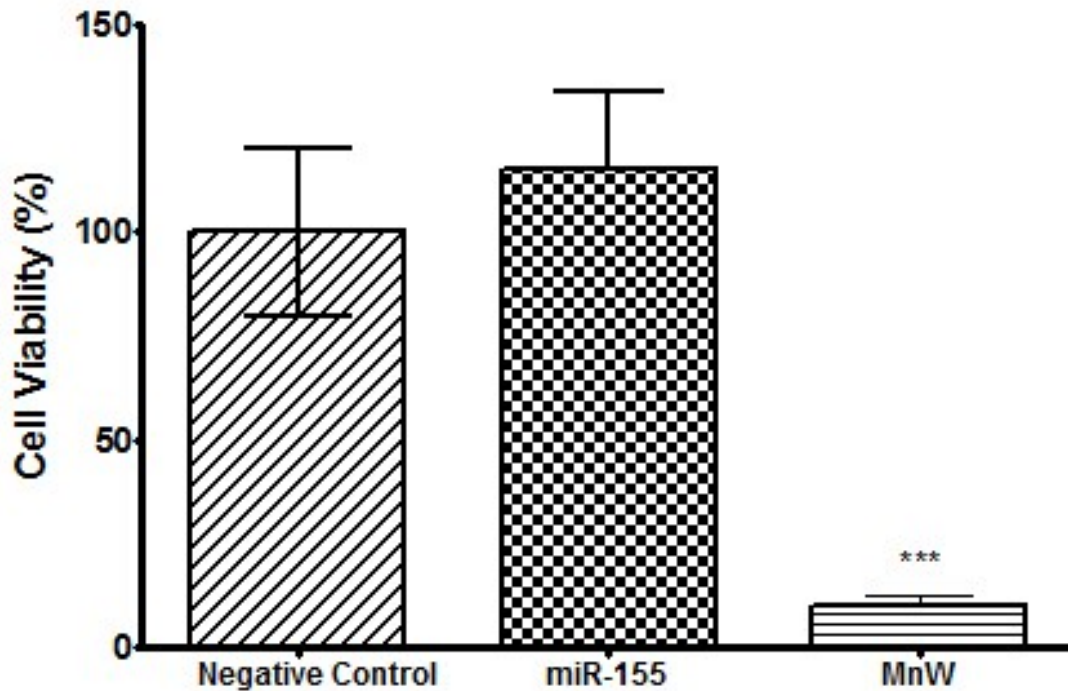
**Cytotoxicity of miR-155 Mimic**

The neuronal co-cultures were seeded in 96 well plates at a cell density of 50,000 cells/well. Following seeding and overnight incubation, a 5x (125 pmol) concentration of the miR-155-5p mimic (Thermo Fisher Scientific) was transfected into the co-cultures using the Lipofectamine® RNAiMAX™ reagent (Thermo Fisher Scientific) per manufacturer's instructions. Following a 72 h transfection, cell viability was evaluated using the MTS reagent (CellTiter 96®, Promega), and a weekly dose of Mn nanoparticles was used a positive control.

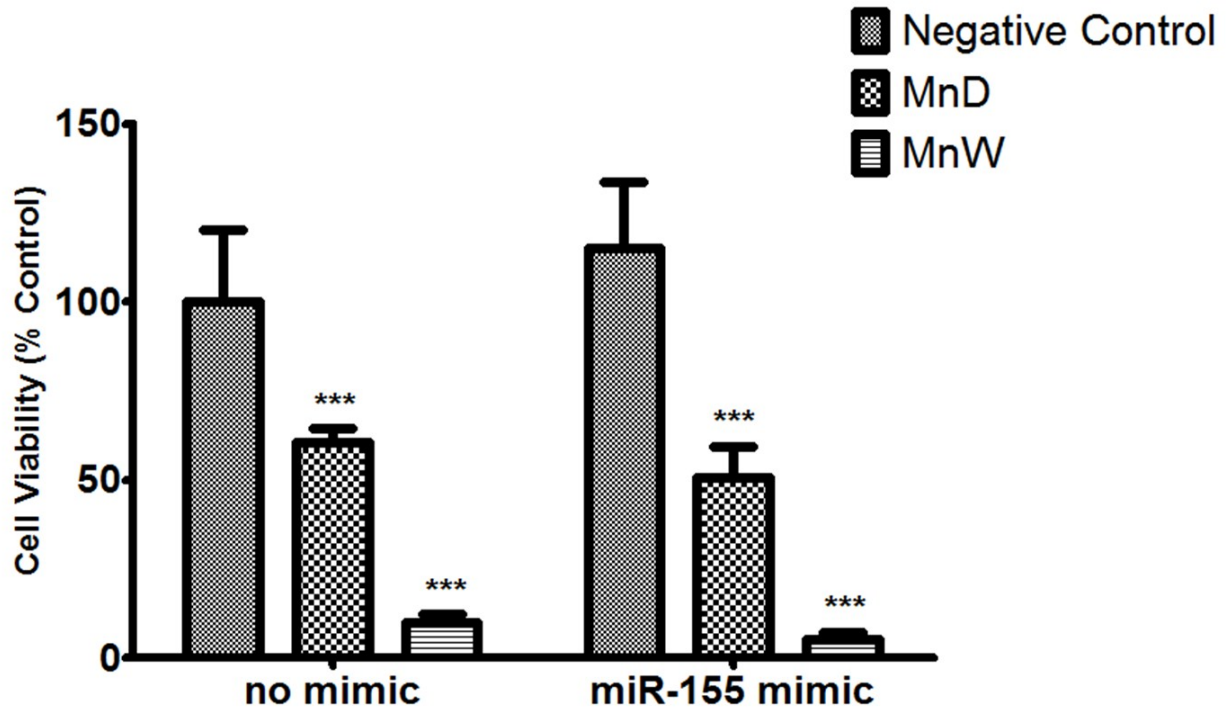**Cytotoxicity of MnNP following miR-155 Restoration**

The neuronal co-cultures were seeded in 96 well plates at a cell density of 50,000 cells/well. Following seeding and overnight incubation, a 5x (125 pmol) concentration of the miR-155-5p mimic (Thermo Fisher Scientific) was transfected into the co-cultures using the Lipofectamine® RNAiMAX™ reagent (Thermo Fisher Scientific) per manufacturer's instructions. Following a 72 h transfection, the cells were treated with the daily and weekly dose of MnNPs for 24 h. Following treatment, cell viability was evaluated using the MTS reagent (CellTiter 96®, Promega).

**Supplemental Figure 1. Optimization of miR-155 Mimic.** Neuronal co-cultures were transfected with a miR-155 mimic and RNA was isolated to evaluate expression of *Tnf-α* using qPCR. Expression of *Tnf-α* following miR-155 mimic transfection was significantly reduced by both the 5x (125 pmol) and 10x (250 pmol) concentrations indicating successful transfection of miR-155. An * represents if the p value <0.05, ** if the p value <0.01, and *** if the p value <0.001 when compared to the control.

**Supplemental Figure 2. Cell Viability 72 hours Post-transfection of the 5x miR-155 mimic.** Neuronal co-cultures were transfected with a 5x (125 pmol) miR-155 mimic for 72 h or treated with a weekly dose of manganese nanoparticles for 24 h (positive control). Following treatment cell viability was analyzed using the MTS assay. There was no difference in cell viability for the untreated neuronal co-cultures and the miR-155 transfected co-cultures, indicating that the mimic was not toxic. An * represents if the p value <0.05, ** if the p value <0.01, and *** if the p value <0.001 when compared to the control.

**Supplemental Figure 3. Cell Viability Following 72 Post Transfection with the 5x miR-155 mimic and Mn Treatment.** Neuronal co-cultures were transfected with a 5x (125 pmol) miR-155 mimic for 72 h and then dosed with the daily and weekly doses of Mn NPs for 24 h. Following treatment cell viability was analyzed using the MTS assay. Cell viability did not change between the treatments groups when miR-155 expression was restored. An * represents if the p value <0.05, ** if the p value <0.01, and *** if the p value <0.001 when compared to the control.

**Table S1. Up-regulated Genes Unique to the MnD Treatment**

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-6987-5p | 15.09 | mmu-miR-6899-3p | 4.01 |
| mmu-miR-1964-3p | 11.59 | mmu-miR-193b-5p | 3.98 |
| mmu-miR-7038-5p | 11.18 | mmu-miR-1966-5p | 3.94 |
| mmu-miR-344g-5p | 11.04 | mmu-miR-7090-3p | 3.92 |
| mmu-miR-7081-3p | 10.03 | mmu-miR-7049-5p | 3.89 |
| mmu-miR-219a-2-3p | 8.80 | mmu-miR-455-3p | 3.88 |
| mmu-miR-6916-5p | 8.28 | mmu-miR-6403 | 3.87 |
| mmu-miR-6927-5p | 7.77 | mmu-miR-7226-5p | 3.85 |
| mmu-miR-196a-2-3p | 7.39 | mmu-miR-2139 | 3.81 |
| mmu-miR-7687-5p | 6.96 | mmu-miR-1264-3p | 3.75 |
| mmu-miR-7666-3p | 6.50 | mmu-miR-3063-3p | 3.68 |
| mmu-miR-3073a-3p | 6.47 | mmu-miR-7010-5p | 3.64 |
| mmu-miR-7039-3p | 6.41 | mmu-miR-491-5p | 3.62 |
| mmu-miR-6973a-3p | 6.30 | mmu-miR-6921-5p | 3.60 |
| mmu-miR-1231-3p | 6.24 | mmu-miR-6953-5p | 3.59 |
| mmu-miR-7676-3p | 6.15 | mmu-miR-1957b | 3.59 |
| mmu-miR-6354 | 6.11 | mmu-miR-7226-3p | 3.56 |
| mmu-miR-3108-5p | 6.07 | mmu-miR-3103-3p | 3.56 |
| mmu-miR-760-3p | 5.91 | mmu-miR-6919-3p | 3.56 |
| mmu-miR-7213-5p | 5.72 | mmu-miR-7686-3p | 3.47 |
| mmu-miR-8096 | 5.70 | mmu-miR-6362 | 3.44 |
| mmu-miR-218-2-3p | 5.63 | mmu-miR-194-1-3p | 3.42 |
| mmu-miR-6960-5p | 5.62 | mmu-miR-5129-3p | 3.42 |
| mmu-miR-7018-3p | 5.55 | mmu-miR-7071-3p | 3.41 |
| mmu-miR-7010-3p | 5.54 | mmu-miR-7118-3p | 3.39 |
| mmu-miR-7049-3p | 5.46 | mmu-miR-3110-3p | 3.39 |
| mmu-miR-688 | 5.05 | mmu-miR-3088-5p | 3.39 |
| mmu-miR-3470b | 4.80 | mmu-miR-26a-1-3p | 3.34 |
| mmu-miR-683 | 4.75 | mmu-miR-6969-5p | 3.33 |
| mmu-miR-1943-3p | 4.73 | mmu-miR-344f-3p | 3.32 |
| mmu-miR-7079-3p | 4.66 | mmu-let-7k | 3.30 |
| mmu-miR-532-5p | 4.58 | mmu-miR-6962-5p | 3.29 |
| mmu-miR-6972-3p | 4.56 | mmu-miR-7235-3p | 3.27 |
| mmu-miR-199b-5p | 4.55 | mmu-miR-3092-5p | 3.27 |
| mmu-miR-7683-3p | 4.55 | mmu-miR-7687-3p | 3.27 |
| mmu-miR-1906 | 4.46 | mmu-miR-6999-5p | 3.25 |
| mmu-miR-291b-3p | 4.46 | mmu-miR-187-3p | 3.25 |
| mmu-miR-1948-3p | 4.45 | mmu-miR-344i | 3.24 |
| mmu-miR-6899-5p | 4.43 | mmu-miR-3552 | 3.23 |
| mmu-miR-3569-5p | 4.43 | mmu-miR-6977-5p | 3.22 |
| mmu-miR-290a-3p | 4.37 | mmu-miR-146a-3p | 3.21 |
| mmu-miR-1907 | 4.33 | mmu-miR-152-5p | 3.20 |
| mmu-miR-7035-3p | 4.33 | mmu-miR-344g-3p | 3.20 |
| mmu-miR-7025-3p | 4.16 | mmu-miR-692 | 3.19 |
| mmu-miR-219b-3p | 4.14 | mmu-miR-7032-3p | 3.19 |
| mmu-miR-3080-5p | 4.09 | mmu-miR-6901-5p | 3.19 |
| mmu-miR-6922-3p | 4.04 | mmu-miR-203-5p | 3.15 |

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-6989-5p | 3.14 | mmu-miR-718 | 2.59 |
| mmu-miR-192-3p | 3.13 | mmu-miR-7062-5p | 2.58 |
| mmu-miR-7242-3p | 3.12 | mmu-miR-695 | 2.58 |
| mmu-miR-7016-5p | 3.08 | mmu-miR-6407 | 2.56 |
| mmu-miR-7662-3p | 3.06 | mmu-miR-7017-5p | 2.56 |
| mmu-miR-770-5p | 3.04 | mmu-miR-676-3p | 2.56 |
| mmu-miR-344h-3p | 3.04 | mmu-miR-7229-3p | 2.55 |
| mmu-miR-7672-3p | 3.03 | mmu-miR-6989-3p | 2.54 |
| mmu-miR-3088-3p | 3.02 | mmu-miR-6364 | 2.53 |
| mmu-miR-6994-5p | 3.02 | mmu-miR-370-5p | 2.51 |
| mmu-miR-1903 | 2.98 | mmu-miR-544-5p | 2.51 |
| mmu-miR-126a-3p | 2.97 | mmu-miR-3099-5p | 2.50 |
| mmu-miR-18b-3p | 2.95 | mmu-miR-5626-5p | 2.49 |
| mmu-miR-5114 | 2.95 | mmu-miR-133b-5p | 2.49 |
| mmu-miR-879-5p | 2.95 | mmu-miR-6414 | 2.48 |
| mmu-miR-7656-3p | 2.93 | mmu-miR-7022-3p | 2.47 |
| mmu-miR-7230-3p | 2.90 | mmu-miR-7067-3p | 2.46 |
| mmu-miR-6952-5p | 2.90 | mmu-miR-6918-5p | 2.45 |
| mmu-miR-6962-3p | 2.89 | mmu-miR-138-1-3p | 2.44 |
| mmu-miR-184-3p | 2.89 | mmu-miR-7031-5p | 2.44 |
| mmu-miR-582-3p | 2.88 | mmu-miR-6933-5p | 2.43 |
| mmu-miR-377-5p | 2.87 | mmu-miR-7677-3p | 2.42 |
| mmu-miR-3079-5p | 2.86 | mmu-miR-1930-3p | 2.42 |
| mmu-miR-7072-3p | 2.85 | mmu-miR-6913-3p | 2.41 |
| mmu-miR-7217-5p | 2.84 | mmu-miR-200a-5p | 2.41 |
| mmu-miR-7050-5p | 2.84 | mmu-miR-8111 | 2.40 |
| mmu-miR-500-3p | 2.84 | mmu-miR-666-3p | 2.39 |
| mmu-miR-291b-5p | 2.84 | mmu-miR-667-5p | 2.38 |
| mmu-miR-6961-5p | 2.83 | mmu-miR-7228-5p | 2.37 |
| mmu-miR-1970 | 2.82 | mmu-miR-6999-3p | 2.36 |
| mmu-miR-1231-5p | 2.80 | mmu-miR-7002-5p | 2.36 |
| mmu-miR-6947-3p | 2.78 | mmu-miR-7088-3p | 2.35 |
| mmu-miR-3105-5p | 2.74 | mmu-miR-681 | 2.34 |
| mmu-miR-6996-5p | 2.73 | mmu-miR-7018-5p | 2.34 |
| mmu-miR-7014-3p | 2.73 | mmu-miR-204-5p | 2.33 |
| mmu-miR-7011-3p | 2.71 | mmu-miR-6963-3p | 2.33 |
| mmu-miR-697 | 2.68 | mmu-miR-1943-5p | 2.33 |
| mmu-miR-6978-3p | 2.68 | mmu-miR-210-5p | 2.33 |
| mmu-miR-7077-5p | 2.67 | mmu-miR-6947-5p | 2.33 |
| mmu-miR-7238-5p | 2.67 | mmu-miR-1930-5p | 2.32 |
| mmu-miR-1928 | 2.64 | mmu-miR-6907-5p | 2.30 |
| mmu-miR-125b-1-3p | 2.63 | mmu-miR-6917-3p | 2.30 |
| mmu-miR-7081-5p | 2.63 | mmu-miR-6973b-3p | 2.29 |
| mmu-miR-208b-5p | 2.63 | mmu-miR-574-5p | 2.28 |
| mmu-miR-6928-3p | 2.62 | mmu-miR-6237 | 2.27 |
| mmu-miR-7008-5p | 2.61 | mmu-miR-758-3p | 2.27 |
| mmu-miR-7043-5p | 2.60 | mmu-miR-488-3p | 2.27 |

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-6349 | 2.26 | mmu-miR-3070-3p | 2.10 |
| mmu-miR-7234-5p | 2.26 | mmu-miR-6929-5p | 2.10 |
| mmu-miR-574-3p | 2.26 | mmu-miR-7022-5p | 2.10 |
| mmu-miR-6408 | 2.25 | mmu-miR-6374 | 2.10 |
| mmu-miR-691 | 2.25 | mmu-miR-3969 | 2.10 |
| mmu-miR-99a-3p | 2.24 | mmu-miR-7069-3p | 2.09 |
| mmu-miR-7652-5p | 2.24 | mmu-miR-6991-5p | 2.09 |
| mmu-miR-30b-3p | 2.24 | mmu-miR-701-5p | 2.08 |
| mmu-miR-301b-5p | 2.24 | mmu-miR-7053-5p | 2.08 |
| mmu-miR-3091-5p | 2.23 | mmu-miR-8094 | 2.07 |
| mmu-miR-6356 | 2.23 | mmu-miR-145b | 2.07 |
| mmu-miR-7678-5p | 2.23 | mmu-miR-5709-5p | 2.07 |
| mmu-miR-181c-3p | 2.23 | mmu-miR-599 | 2.07 |
| mmu-miR-6909-5p | 2.23 | mmu-miR-103-1-5p | 2.06 |
| mmu-miR-6418-3p | 2.22 | mmu-miR-135a-1-3p | 2.06 |
| mmu-miR-431-3p | 2.22 | mmu-miR-6905-3p | 2.05 |
| mmu-miR-31-5p | 2.21 | mmu-miR-218-1-3p | 2.04 |
| mmu-miR-1251-3p | 2.20 | mmu-miR-6936-5p | 2.04 |
| mmu-miR-216c-5p | 2.20 | mmu-miR-485-3p | 2.02 |
| mmu-miR-7069-5p | 2.19 | mmu-miR-694 | 2.02 |
| mmu-miR-6900-5p | 2.19 | mmu-miR-686 | 2.01 |
| mmu-miR-486a-3p | 2.18 | mmu-miR-412-3p | 2.01 |
| mmu-miR-7684-5p | 2.16 | mmu-miR-5709-5p | 2.07 |
| mmu-miR-3093-3p | 2.15 | mmu-miR-599 | 2.07 |
| mmu-miR-6944-3p | 2.15 | mmu-miR-103-1-5p | 2.06 |
| mmu-miR-449b | 2.15 | mmu-miR-135a-1-3p | 2.06 |
| mmu-miR-325-5p | 2.14 | mmu-miR-6905-3p | 2.05 |
| mmu-miR-7689-3p | 2.14 | mmu-miR-218-1-3p | 2.04 |
| mmu-miR-7062-3p | 2.14 | mmu-miR-6936-5p | 2.04 |
| mmu-miR-7682-5p | 2.13 | mmu-miR-485-3p | 2.02 |
| mmu-miR-5132-3p | 2.13 | mmu-miR-694 | 2.02 |
| mmu-miR-1195 | 2.13 | mmu-miR-686 | 2.01 |
| mmu-miR-6980-3p | 2.12 | mmu-miR-412-3p | 2.01 |
| mmu-miR-193a-3p | 2.12 | mmu-miR-1982-3p | 2.00 |

**Table S2. Down-regulated Genes Unique to the MnD Treatment**

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-290b-5p | -13.33 | mmu-miR-1a-3p | -2.21 |
| mmu-miR-129b-5p | -5.12 | mmu-miR-92a-3p | -2.18 |
| mmu-miR-106b-5p | -2.91 | mmu-miR-21a-5p | -2.17 |
| mmu-miR-374c-3p | -2.66 | mmu-miR-669b-3p | -2.12 |
| mmu-miR-142a-5p | -2.56 | mmu-miR-721 | -2.11 |
| mmu-miR-29a-3p | -2.53 | mmu-miR-466b-5p | -2.11 |
| mmu-miR-30c-5p | -2.50 | mmu-miR-101a-3p | -2.11 |
| mmu-miR-30e-5p | -2.47 | mmu-miR-155-5p | -2.08 |
| mmu-miR-3065-5p | -2.47 | mmu-miR-466k | -2.07 |
| mmu-miR-875-3p | -2.45 | mmu-miR-142b | -2.05 |
| mmu-miR-26a-5p | -2.39 | mmu-miR-3074-2-3p | -2.05 |
| mmu-miR-872-5p | -2.25 | mmu-miR-139-5p | -2.04 |
| mmu-miR-196b-5p | -2.22 | mmu-miR-185-5p | -2.03 |

**Table S3. Up-regulated Genes Unique to the MnW Treatment**

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-337-3p | 6.81 | mmu-miR-3473b | 2.55 |
| mmu-miR-6239 | 6.16 | mmu-miR-497a-5p | 2.51 |
| mmu-miR-7065-3p | 5.73 | mmu-miR-344c-5p | 2.49 |
| mmu-miR-302d-3p | 5.11 | mmu-miR-690 | 2.48 |
| mmu-miR-7651-3p | 5.09 | mmu-miR-466f | 2.47 |
| mmu-miR-3620-3p | 4.79 | mmu-miR-5619-5p | 2.46 |
| mmu-miR-8093 | 4.59 | mmu-miR-6912-5p | 2.45 |
| mmu-miR-3097-5p | 4.53 | mmu-miR-7007-3p | 2.42 |
| mmu-miR-6995-3p | 4.39 | mmu-miR-669d-2-3p | 2.38 |
| mmu-miR-6964-5p | 4.05 | mmu-miR-365-1-5p | 2.37 |
| mmu-miR-7224-3p | 4.05 | mmu-miR-218-5p | 2.37 |
| mmu-miR-719 | 3.89 | mmu-miR-30c-1-3p | 2.37 |
| mmu-miR-7116-3p | 3.81 | mmu-miR-3090-5p | 2.37 |
| mmu-miR-7092-3p | 3.70 | mmu-miR-7236-5p | 2.37 |
| mmu-miR-3066-5p | 3.58 | mmu-miR-3078-5p | 2.36 |
| mmu-miR-367-3p | 3.48 | mmu-miR-6937-5p | 2.36 |
| mmu-miR-672-5p | 3.46 | mmu-miR-3103-5p | 2.36 |
| mmu-miR-5126 | 3.43 | mmu-miR-669k-5p | 2.35 |
| mmu-miR-3473c | 3.07 | mmu-miR-7054-5p | 2.34 |
| mmu-miR-122-5p | 3.03 | mmu-miR-383-5p | 2.33 |
| mmu-miR-7035-5p | 2.96 | mmu-miR-6931-5p | 2.33 |
| mmu-miR-467f | 2.92 | mmu-miR-8103 | 2.32 |
| mmu-miR-6948-3p | 2.90 | mmu-miR-489-3p | 2.29 |
| mmu-miR-3970 | 2.89 | mmu-miR-7116-5p | 2.28 |
| mmu-miR-1892 | 2.80 | mmu-miR-1929-5p | 2.28 |
| mmu-miR-5098 | 2.79 | mmu-miR-344h-5p | 2.27 |
| mmu-miR-6390 | 2.78 | mmu-miR-6960-3p | 2.27 |
| mmu-miR-6933-3p | 2.78 | mmu-miR-6979-5p | 2.24 |
| mmu-miR-7013-5p | 2.76 | mmu-miR-6969-3p | 2.24 |
| mmu-miR-1934-3p | 2.75 | mmu-miR-3572-3p | 2.24 |
| mmu-miR-329-3p | 2.73 | mmu-miR-7085-3p | 2.21 |
| mmu-miR-7117-3p | 2.72 | mmu-miR-302a-3p | 2.21 |
| mmu-miR-292b-3p | 2.71 | mmu-miR-7688-3p | 2.19 |
| mmu-miR-6915-5p | 2.70 | mmu-miR-93-3p | 2.19 |
| mmu-miR-466l-5p | 2.70 | mmu-miR-381-3p | 2.17 |
| mmu-miR-1224-3p | 2.70 | mmu-miR-496a-5p | 2.16 |
| mmu-miR-669d-3p | 2.63 | mmu-miR-329-5p | 2.15 |
| mmu-miR-669h-3p | 2.59 | mmu-miR-376b-5p | 2.14 |
| mmu-miR-6980-5p | 2.59 | mmu-miR-8108 | 2.14 |
| mmu-miR-7068-5p | 2.58 | mmu-miR-6348 | 2.13 |
| mmu-miR-202-5p | 2.58 | mmu-miR-7061-3p | 2.13 |
| mmu-miR-7047-5p | 2.56 | mmu-miR-3473e | 2.12 |
| mmu-miR-497b | 2.56 | mmu-miR-9-5p | 2.11 |
| mmu-miR-3473b | 6.81 | mmu-miR-133a-3p | 2.11 |
| mmu-miR-497a-5p | 6.16 | mmu-miR-6906-5p | 2.11 |

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-186-3p | 2.10 | mmu-miR-6983-5p | 2.05 |

| | | | |
|---|---|---|---|
| mmu-miR-376c-5p | 2.10 | mmu-miR-210-3p | 2.05 |
| mmu-miR-7068-3p | 2.10 | mmu-miR-1897-5p | 2.04 |
| mmu-miR-7230-5p | 2.09 | mmu-miR-6401 | 2.04 |
| mmu-miR-33-5p | 2.08 | mmu-miR-32-5p | 2.04 |
| mmu-miR-92a-2-5p | 2.07 | mmu-miR-298-3p | 2.03 |
| mmu-miR-3069-3p | 2.06 | mmu-miR-6406 | 2.03 |
| mmu-miR-202-3p | 2.06 | mmu-miR-6993-3p | 2.01 |
| mmu-miR-7088-5p | 2.06 | mmu-miR-8091 | 2.00 |

**Table S4. Down-regulated Genes Unique to the MnW Treatment**

| Gene Symbol | Fold Change | Gene Symbol | Fold Change |
|---|---|---|---|
| mmu-miR-299b-5p | -43.37 | mmu-miR-489-5p | -2.47 |
| mmu-miR-24-1-5p | -6.66 | mmu-miR-34c-3p | -2.36 |
| mmu-miR-1a-2-5p | -6.07 | mmu-miR-542-5p | -2.35 |
| mmu-miR-130b-3p | -5.37 | mmu-miR-466o-3p | -2.35 |
| mmu-miR-6399 | -4.98 | mmu-miR-338-3p | -2.34 |
| mmu-miR-465d-5p | -4.61 | mmu-miR-3071-5p | -2.33 |
| mmu-miR-1298-3p | -3.71 | mmu-miR-5710 | -2.33 |
| mmu-miR-6398 | -3.52 | mmu-miR-1971 | -2.28 |
| mmu-miR-181b-1-3p | -3.52 | mmu-miR-1936 | -2.28 |
| mmu-miR-6902-3p | -3.42 | mmu-miR-544-3p | -2.26 |
| mmu-miR-6981-3p | -3.36 | mmu-miR-215-5p | -2.23 |
| mmu-miR-3544-5p | -3.33 | mmu-miR-713 | -2.23 |
| mmu-miR-144-5p | -3.29 | mmu-miR-146b-5p | -2.22 |
| mmu-miR-200b-3p | -3.21 | mmu-miR-135a-2-3p | -2.21 |
| mmu-miR-3057-3p | -3.15 | mmu-miR-3618-3p | -2.21 |
| mmu-miR-181b-2-3p | -3.10 | mmu-miR-6244 | -2.19 |
| mmu-miR-6341 | -3.08 | mmu-miR-344b-5p | -2.19 |
| mmu-miR-410-5p | -3.04 | mmu-miR-6942-5p | -2.18 |
| mmu-miR-698-5p | -3.02 | mmu-miR-802-3p | -2.18 |
| mmu-miR-592-3p | -3.01 | mmu-miR-677-5p | -2.18 |
| mmu-miR-700-5p | -2.99 | mmu-miR-297b-5p | -2.18 |
| mmu-miR-499-3p | -2.98 | mmu-miR-7b-3p | -2.17 |
| mmu-miR-592-5p | -2.96 | mmu-miR-7646-5p | -2.16 |
| mmu-miR-6908-3p | -2.93 | mmu-miR-7219-5p | -2.14 |
| mmu-miR-18b-5p | -2.92 | mmu-miR-34c-5p | -2.13 |
| mmu-miR-6992-3p | -2.90 | mmu-miR-509-5p | -2.13 |
| mmu-miR-5616-3p | -2.86 | mmu-miR-338-5p | -2.12 |
| mmu-miR-496b | -2.81 | mmu-miR-24-2-5p | -2.12 |
| mmu-miR-5104 | -2.80 | mmu-miR-466l-3p | -2.10 |
| mmu-miR-6355 | -2.79 | mmu-miR-6994-3p | -2.09 |
| mmu-miR-468-5p | -2.70 | mmu-miR-693-3p | -2.09 |
| mmu-miR-876-5p | -2.67 | mmu-miR-144-3p | -2.09 |
| mmu-miR-669e-3p | -2.65 | mmu-miR-6516-5p | -2.09 |
| mmu-miR-598-3p | -2.63 | mmu-miR-764-5p | -2.06 |
| mmu-miR-302b-5p | -2.59 | mmu-miR-129-1-3p | -2.05 |
| mmu-miR-101c | -2.51 | mmu-miR-214-3p | -2.04 |
| mmu-miR-449c-5p | -2.51 | mmu-miR-674-5p | -2.04 |
| mmu-miR-6539 | -2.49 | mmu-miR-20b-3p | -2.03 |
| mmu-miR-101a-5p | -2.49 | mmu-miR-5124b | -2.03 |

**Table S5. Up-regulated Genes Linked to Mn Treatment**

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-7044-5p | 6.24 | 28.90 |
| mmu-miR-7086-5p | 5.32 | 13.59 |
| mmu-miR-467b-3p | 2.04 | 13.19 |
| mmu-miR-7009-5p | 7.00 | 11.74 |
| mmu-miR-673-5p | 18.42 | 11.60 |
| mmu-miR-3109-5p | 12.37 | 11.60 |
| mmu-miR-6979-3p | 9.69 | 11.14 |
| mmu-miR-7118-5p | 3.15 | 10.83 |
| mmu-miR-7682-3p | 4.99 | 10.61 |
| mmu-miR-1982-5p | 7.16 | 10.42 |
| mmu-miR-873a-3p | 4.14 | 10.28 |
| mmu-miR-7006-5p | 2.43 | 10.21 |
| mmu-miR-7001-5p | 8.32 | 9.96 |
| mmu-miR-3100-5p | 4.72 | 9.84 |
| mmu-miR-7119-5p | 5.13 | 9.81 |
| mmu-miR-6914-5p | 7.18 | 9.63 |
| mmu-miR-706 | 2.88 | 9.37 |
| mmu-miR-7089-3p | 10.10 | 9.28 |
| mmu-miR-3113-3p | 5.54 | 9.27 |
| mmu-miR-7115-5p | 7.96 | 8.51 |
| mmu-miR-7025-5p | 9.50 | 8.23 |
| mmu-miR-7085-5p | 5.09 | 8.10 |
| mmu-miR-1968-3p | 10.68 | 8.06 |
| mmu-miR-6240 | 3.39 | 7.85 |
| mmu-miR-7240-3p | 3.87 | 7.82 |
| mmu-miR-6366 | 6.97 | 7.82 |
| mmu-miR-6387 | 5.54 | 7.46 |
| mmu-miR-8117 | 6.81 | 7.34 |
| mmu-miR-7048-5p | 12.97 | 7.26 |
| mmu-miR-6972-5p | 5.39 | 7.26 |
| mmu-miR-5615-5p | 3.72 | 7.23 |
| mmu-miR-7089-5p | 10.78 | 7.16 |
| mmu-miR-6974-5p | 2.89 | 7.10 |
| mmu-miR-6927-3p | 11.72 | 6.93 |
| mmu-miR-7034-5p | 7.97 | 6.93 |
| mmu-miR-675-5p | 8.31 | 6.84 |
| mmu-miR-7239-5p | 6.95 | 6.69 |
| mmu-miR-1931 | 6.54 | 6.53 |
| mmu-miR-8101 | 4.42 | 6.43 |
| mmu-miR-1188-3p | 3.94 | 6.42 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |

| | | |
|---|---|---|
| mmu-miR-7004-5p | 7.16 | 6.28 |
| mmu-miR-1947-5p | 4.71 | 6.26 |
| mmu-miR-6965-5p | 4.86 | 6.20 |
| mmu-miR-5132-5p | 3.36 | 6.15 |
| mmu-miR-185-3p | 7.72 | 6.12 |
| mmu-miR-6970-5p | 5.15 | 6.10 |
| mmu-miR-1900 | 7.40 | 6.04 |
| mmu-miR-6365 | 3.93 | 5.96 |
| mmu-miR-292a-5p | 2.58 | 5.96 |
| mmu-miR-760-5p | 8.61 | 5.92 |
| mmu-miR-5627-3p | 18.37 | 5.92 |
| mmu-miR-874-5p | 5.89 | 5.83 |
| mmu-miR-3064-5p | 2.89 | 5.76 |
| mmu-miR-5103 | 3.66 | 5.75 |
| mmu-miR-133b-3p | 2.91 | 5.75 |
| mmu-miR-7654-3p | 5.11 | 5.70 |
| mmu-miR-375-5p | 3.13 | 5.68 |
| mmu-miR-5623-3p | 2.19 | 5.67 |
| mmu-miR-290a-5p | 3.23 | 5.59 |
| mmu-miR-6936-3p | 8.42 | 5.59 |
| mmu-miR-7080-5p | 2.30 | 5.54 |
| mmu-miR-1199-3p | 5.89 | 5.53 |
| mmu-miR-3074-1-3p | 5.63 | 5.53 |
| mmu-miR-30e-3p | 10.81 | 5.49 |
| mmu-miR-6982-3p | 8.86 | 5.45 |
| mmu-miR-5131 | 5.02 | 5.45 |
| mmu-miR-3473g | 2.15 | 5.40 |
| mmu-miR-7119-3p | 2.27 | 5.37 |
| mmu-miR-3073b-3p | 6.03 | 5.34 |
| mmu-miR-346-3p | 4.79 | 5.31 |
| mmu-miR-3078-3p | 4.47 | 5.27 |
| mmu-miR-7036b-5p | 4.36 | 5.25 |
| mmu-miR-6382 | 3.11 | 5.25 |
| mmu-miR-1192 | 3.64 | 5.23 |
| mmu-miR-7231-5p | 3.03 | 5.19 |
| mmu-miR-6897-3p | 5.01 | 5.15 |
| mmu-miR-7036b-3p | 3.62 | 5.15 |
| mmu-miR-3061-5p | 4.69 | 5.11 |
| mmu-miR-320-5p | 5.31 | 5.08 |
| mmu-miR-7078-5p | 3.86 | 5.07 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-7677-5p | 10.51 | 5.06 |
| mmu-miR-5621-3p | 3.16 | 5.03 |
| mmu-miR-7033-3p | 6.53 | 5.02 |
| mmu-miR-5622-3p | 4.03 | 5.01 |
| mmu-miR-1895 | 3.18 | 4.95 |
| mmu-miR-138-2-3p | 8.65 | 4.94 |
| mmu-miR-615-5p | 2.44 | 4.93 |
| mmu-miR-7070-5p | 5.45 | 4.93 |
| mmu-miR-7075-5p | 2.27 | 4.90 |
| mmu-miR-302c-3p | 2.30 | 4.84 |
| mmu-miR-6958-5p | 4.94 | 4.83 |
| mmu-miR-3102-5p | 3.63 | 4.80 |
| mmu-miR-6368 | 3.16 | 4.78 |
| mmu-miR-1893 | 5.56 | 4.77 |
| mmu-miR-6968-5p | 4.81 | 4.72 |
| mmu-miR-331-5p | 5.33 | 4.71 |
| mmu-miR-7671-3p | 6.83 | 4.71 |
| mmu-miR-219c-5p | 3.37 | 4.69 |
| mmu-miR-208b-3p | 4.02 | 4.67 |
| mmu-miR-3067-3p | 5.91 | 4.65 |
| mmu-miR-200c-5p | 6.09 | 4.62 |
| mmu-miR-6909-3p | 6.35 | 4.62 |
| mmu-miR-219a-1-3p | 5.02 | 4.60 |
| mmu-miR-194-2-3p | 4.59 | 4.58 |
| mmu-miR-5101 | 2.78 | 4.56 |
| mmu-miR-1905 | 3.02 | 4.56 |
| mmu-miR-6987-3p | 3.38 | 4.55 |
| mmu-miR-6715-5p | 4.68 | 4.52 |
| mmu-miR-6985-3p | 3.29 | 4.52 |
| mmu-miR-216b-3p | -9.44 | 4.51 |
| mmu-miR-6392-3p | 7.41 | 4.50 |
| mmu-miR-7052-3p | 4.42 | 4.50 |
| mmu-miR-7686-5p | 8.67 | 4.45 |
| mmu-miR-6923-5p | 3.68 | 4.45 |
| mmu-miR-7212-5p | 8.19 | 4.45 |
| mmu-miR-6402 | 3.93 | 4.44 |
| mmu-miR-374b-5p | 6.47 | 4.43 |
| mmu-miR-8112 | 3.16 | 4.43 |
| mmu-miR-7218-3p | 2.69 | 4.40 |
| mmu-miR-6395 | 2.81 | 4.40 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-711 | 3.07 | 4.38 |
| mmu-miR-7007-5p | 4.06 | 4.34 |
| mmu-miR-6934-5p | 3.95 | 4.33 |
| mmu-miR-3960 | 5.46 | 4.30 |
| mmu-miR-8119 | 5.94 | 4.30 |
| mmu-miR-7223-3p | 2.82 | 4.29 |
| mmu-miR-5130 | 6.04 | 4.28 |
| mmu-miR-7216-3p | 4.10 | 4.27 |
| mmu-miR-6236 | 12.43 | 4.26 |
| mmu-miR-6945-5p | 4.76 | 4.26 |
| mmu-miR-6344 | 2.11 | 4.25 |
| mmu-miR-1954 | 22.98 | 4.25 |
| mmu-miR-1247-5p | 4.19 | 4.18 |
| mmu-miR-7087-5p | 5.48 | 4.17 |
| mmu-miR-149-3p | 5.37 | 4.16 |
| mmu-miR-7648-5p | 8.63 | 4.15 |
| mmu-miR-6930-5p | 4.28 | 4.14 |
| mmu-miR-466i-5p | 2.18 | 4.11 |
| mmu-miR-7674-3p | 28.56 | 4.08 |
| mmu-miR-7028-3p | 3.73 | 4.07 |
| mmu-miR-294-3p | 4.11 | 4.06 |
| mmu-miR-6409 | 3.26 | 4.04 |
| mmu-miR-6943-5p | 2.39 | 4.04 |
| mmu-miR-6908-5p | 3.42 | 4.03 |
| mmu-miR-206-3p | 2.19 | 4.01 |
| mmu-miR-5100 | 3.37 | 4.00 |
| mmu-miR-7658-5p | 6.64 | 3.98 |
| mmu-miR-6997-5p | 3.45 | 3.96 |
| mmu-miR-7657-3p | 2.61 | 3.96 |
| mmu-miR-702-5p | 2.67 | 3.94 |
| mmu-miR-7000-3p | 5.51 | 3.94 |
| mmu-miR-6372 | 6.34 | 3.92 |
| mmu-miR-6943-3p | 4.58 | 3.91 |
| mmu-miR-7211-5p | 3.55 | 3.88 |
| mmu-miR-7027-3p | 3.54 | 3.88 |
| mmu-miR-7669-3p | 2.92 | 3.87 |
| mmu-miR-8098 | 5.52 | 3.86 |
| mmu-miR-8113 | 2.93 | 3.84 |
| mmu-miR-7033-5p | 5.02 | 3.81 |
| mmu-miR-26b-3p | 3.01 | 3.81 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-7046-3p | 4.46 | 3.79 |
| mmu-miR-3076-3p | 3.42 | 3.77 |
| mmu-miR-6392-5p | 4.66 | 3.76 |
| mmu-miR-935 | 5.60 | 3.74 |
| mmu-miR-7036a-5p | 4.82 | 3.73 |
| mmu-miR-3100-3p | 2.28 | 3.72 |
| mmu-miR-6990-3p | 9.83 | 3.70 |
| mmu-miR-6939-5p | 4.49 | 3.70 |
| mmu-miR-5125 | 11.47 | 3.70 |
| mmu-miR-3072-3p | 2.08 | 3.68 |
| mmu-miR-7076-5p | 11.17 | 3.68 |
| mmu-miR-6238 | 3.61 | 3.67 |
| mmu-miR-7084-3p | 2.51 | 3.66 |
| mmu-miR-6966-5p | 3.19 | 3.66 |
| mmu-miR-7050-3p | 2.82 | 3.66 |
| mmu-miR-6974-3p | 3.91 | 3.64 |
| mmu-miR-5621-5p | 4.62 | 3.64 |
| mmu-miR-323-5p | 5.24 | 3.63 |
| mmu-miR-7019-5p | 2.82 | 3.62 |
| mmu-miR-7679-3p | 3.64 | 3.62 |
| mmu-miR-328-3p | 6.21 | 3.61 |
| mmu-miR-6975-5p | 2.99 | 3.61 |
| mmu-miR-6347 | 3.74 | 3.61 |
| mmu-miR-7087-3p | 2.14 | 3.61 |
| mmu-miR-5133 | 5.78 | 3.61 |
| mmu-miR-9769-3p | 3.71 | 3.60 |
| mmu-miR-7011-5p | 3.01 | 3.59 |
| mmu-miR-539-5p | 2.57 | 3.58 |
| mmu-miR-302c-5p | 6.45 | 3.58 |
| mmu-miR-7064-3p | 5.41 | 3.58 |
| mmu-miR-8102 | 4.32 | 3.57 |
| mmu-miR-486a-5p | 3.12 | 3.56 |
| mmu-miR-7221-3p | 3.19 | 3.55 |
| mmu-miR-6901-3p | 4.01 | 3.55 |
| mmu-miR-615-3p | 3.08 | 3.55 |
| mmu-miR-5107-5p | 5.58 | 3.53 |
| mmu-miR-6405 | 2.86 | 3.53 |
| mmu-miR-7071-5p | 2.99 | 3.49 |
| mmu-miR-6896-5p | 3.18 | 3.48 |
| mmu-miR-7028-5p | 5.16 | 3.48 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-7009-3p | 5.62 | 3.47 |
| mmu-miR-1904 | 2.45 | 3.45 |
| mmu-miR-128-2-5p | 3.20 | 3.44 |
| mmu-miR-6715-3p | 4.03 | 3.43 |
| mmu-miR-5112 | 3.08 | 3.42 |
| mmu-miR-671-3p | 10.45 | 3.42 |
| mmu-miR-491-3p | 7.77 | 3.42 |
| mmu-miR-129-2-3p | 20.99 | 3.41 |
| mmu-miR-7685-3p | 15.65 | 3.38 |
| mmu-miR-1964-5p | 4.30 | 3.38 |
| mmu-miR-7090-5p | 2.49 | 3.34 |
| mmu-miR-7045-5p | 2.84 | 3.34 |
| mmu-miR-7216-5p | 2.26 | 3.33 |
| mmu-miR-7032-5p | 4.13 | 3.33 |
| mmu-miR-7017-3p | 3.16 | 3.33 |
| mmu-miR-3059-3p | 4.25 | 3.33 |
| mmu-miR-6968-3p | 2.83 | 3.32 |
| mmu-miR-7059-5p | 2.59 | 3.28 |
| mmu-miR-7217-3p | 5.94 | 3.27 |
| mmu-miR-7030-5p | 5.24 | 3.25 |
| mmu-miR-3547-3p | 2.44 | 3.25 |
| mmu-miR-6769b-5p | 2.35 | 3.25 |
| mmu-miR-7648-3p | 5.62 | 3.24 |
| mmu-miR-7689-5p | 6.99 | 3.23 |
| mmu-miR-7082-5p | 4.88 | 3.21 |
| mmu-miR-3154 | 5.18 | 3.20 |
| mmu-miR-146b-3p | 5.30 | 3.19 |
| mmu-miR-134-3p | 2.54 | 3.19 |
| mmu-miR-494-5p | 8.73 | 3.17 |
| mmu-miR-3547-5p | 2.53 | 3.15 |
| mmu-miR-7006-3p | 4.31 | 3.13 |
| mmu-miR-3101-3p | 5.13 | 3.13 |
| mmu-miR-182-3p | 5.70 | 3.12 |
| mmu-miR-7012-3p | 3.51 | 3.11 |
| mmu-miR-7215-3p | 8.58 | 3.11 |
| mmu-miR-365-2-5p | 2.44 | 3.11 |
| mmu-miR-3108-3p | 4.03 | 3.10 |
| mmu-miR-328-5p | 3.78 | 3.10 |
| mmu-miR-302a-5p | 2.53 | 3.09 |
| mmu-miR-5134-3p | 3.25 | 3.09 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-6988-5p | 4.92 | 3.07 |
| mmu-miR-1193-5p | 2.46 | 3.06 |
| mmu-miR-5135 | 2.90 | 3.05 |
| mmu-miR-7029-5p | 6.79 | 3.05 |
| mmu-miR-7668-3p | 3.23 | 3.05 |
| mmu-miR-1190 | 5.04 | 3.04 |
| mmu-miR-5627-5p | 4.41 | 3.04 |
| mmu-miR-3085-5p | 3.70 | 3.03 |
| mmu-miR-6973a-5p | 3.15 | 3.03 |
| mmu-miR-3065-3p | 2.45 | 3.03 |
| mmu-miR-7058-5p | 5.88 | 3.02 |
| mmu-miR-3968 | 2.56 | 3.02 |
| mmu-miR-3474 | 3.34 | 3.00 |
| mmu-miR-1258-3p | 3.16 | 3.00 |
| mmu-miR-709 | 3.99 | 2.99 |
| mmu-miR-1306-3p | 3.02 | 2.99 |
| mmu-miR-7067-5p | 6.32 | 2.98 |
| mmu-miR-6981-5p | 4.49 | 2.98 |
| mmu-miR-207 | 2.61 | 2.97 |
| mmu-miR-1946b | 5.13 | 2.96 |
| mmu-miR-7221-5p | 9.08 | 2.96 |
| mmu-miR-300-3p | 2.29 | 2.95 |
| mmu-miR-6940-5p | 2.65 | 2.95 |
| mmu-miR-1894-3p | 2.43 | 2.94 |
| mmu-miR-486b-3p | 4.17 | 2.94 |
| mmu-miR-6352 | 3.07 | 2.93 |
| mmu-miR-378b | 2.47 | 2.92 |
| mmu-miR-199a-5p | 3.37 | 2.92 |
| mmu-miR-92b-5p | 3.08 | 2.91 |
| mmu-miR-3072-5p | 4.74 | 2.91 |
| mmu-miR-7042-5p | 2.97 | 2.91 |
| mmu-miR-7075-3p | 2.52 | 2.90 |
| mmu-miR-7083-3p | 4.84 | 2.89 |
| mmu-miR-503-3p | 3.36 | 2.88 |
| mmu-miR-6955-5p | 2.42 | 2.88 |
| mmu-miR-3102-3p.2-3p | 4.67 | 2.86 |
| mmu-miR-1938 | 12.72 | 2.86 |
| mmu-miR-7223-5p | 2.40 | 2.85 |
| mmu-miR-3113-5p | 8.36 | 2.85 |
| mmu-miR-3061-3p | 4.01 | 2.84 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-23a-5p | 2.63 | 2.84 |
| mmu-miR-8097 | 4.34 | 2.84 |
| mmu-miR-6396 | 2.70 | 2.84 |
| mmu-miR-3475-3p | 2.76 | 2.84 |
| mmu-miR-3077-3p | 8.01 | 2.84 |
| mmu-miR-770-3p | 6.41 | 2.84 |
| mmu-miR-1224-5p | 2.45 | 2.83 |
| mmu-miR-1951 | 3.02 | 2.83 |
| mmu-miR-187-5p | 6.67 | 2.82 |
| mmu-miR-6934-3p | 3.17 | 2.82 |
| mmu-miR-7671-5p | 11.70 | 2.81 |
| mmu-miR-6418-5p | 3.84 | 2.81 |
| mmu-miR-6970-3p | 2.15 | 2.81 |
| mmu-miR-6998-3p | 3.55 | 2.81 |
| mmu-miR-7659-5p | 3.23 | 2.80 |
| mmu-miR-195a-3p | 5.74 | 2.80 |
| mmu-miR-7670-3p | 2.20 | 2.79 |
| mmu-miR-3077-5p | 4.21 | 2.79 |
| mmu-miR-6932-3p | 4.18 | 2.79 |
| mmu-miR-212-5p | 8.45 | 2.79 |
| mmu-miR-6993-5p | 4.21 | 2.79 |
| mmu-miR-3067-5p | 3.05 | 2.79 |
| mmu-miR-6950-5p | 3.03 | 2.77 |
| mmu-miR-92b-3p | 3.45 | 2.77 |
| mmu-miR-7080-3p | 4.05 | 2.76 |
| mmu-miR-341-5p | 7.39 | 2.75 |
| mmu-miR-5120 | 3.66 | 2.74 |
| mmu-miR-331-3p | 4.08 | 2.72 |
| mmu-miR-1983 | 2.75 | 2.72 |
| mmu-miR-7658-3p | 2.38 | 2.72 |
| mmu-miR-6916-3p | 3.17 | 2.71 |
| mmu-let-7g-3p | 4.73 | 2.71 |
| mmu-miR-3963 | 2.91 | 2.70 |
| mmu-miR-7059-3p | 2.91 | 2.70 |
| mmu-miR-6922-5p | 2.61 | 2.70 |
| mmu-miR-291a-5p | 4.22 | 2.69 |
| mmu-miR-6959-5p | 4.10 | 2.69 |
| mmu-miR-504-3p | 2.64 | 2.68 |
| mmu-miR-8114 | 2.23 | 2.68 |
| mmu-miR-7014-5p | 2.19 | 2.67 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-6941-5p | 2.12 | 2.67 |
| mmu-miR-7240-5p | 5.00 | 2.65 |
| mmu-miR-1894-5p | 2.94 | 2.65 |
| mmu-miR-5110 | 4.08 | 2.65 |
| mmu-miR-1941-5p | 2.79 | 2.65 |
| mmu-miR-3472 | 3.52 | 2.64 |
| mmu-miR-211-5p | 4.74 | 2.64 |
| mmu-miR-3075-5p | 2.43 | 2.64 |
| mmu-miR-6915-3p | 4.44 | 2.62 |
| mmu-miR-7654-5p | 2.36 | 2.61 |
| mmu-miR-7047-3p | 3.37 | 2.61 |
| mmu-miR-6986-3p | 2.12 | 2.60 |
| mmu-miR-7005-5p | 2.89 | 2.60 |
| mmu-miR-7056-5p | 3.01 | 2.60 |
| mmu-miR-3102-3p | 3.45 | 2.60 |
| mmu-miR-677-3p | 3.37 | 2.60 |
| mmu-miR-7647-3p | 2.84 | 2.59 |
| mmu-miR-6537-5p | 2.93 | 2.59 |
| mmu-miR-6912-3p | 4.99 | 2.58 |
| mmu-miR-7679-5p | 4.29 | 2.58 |
| mmu-miR-3098-3p | 4.22 | 2.56 |
| mmu-miR-6965-3p | 2.96 | 2.56 |
| mmu-miR-1956 | 4.72 | 2.56 |
| mmu-miR-7235-5p | 4.53 | 2.56 |
| mmu-miR-6546-3p | 3.54 | 2.56 |
| mmu-miR-6546-5p | 2.80 | 2.55 |
| mmu-miR-7685-5p | 4.26 | 2.53 |
| mmu-miR-7074-3p | 2.43 | 2.53 |
| mmu-miR-1247-3p | 2.94 | 2.53 |
| mmu-miR-8105 | 4.36 | 2.52 |
| mmu-miR-6941-3p | 2.50 | 2.52 |
| mmu-miR-344-5p | 3.15 | 2.52 |
| mmu-miR-7023-5p | 7.57 | 2.52 |
| mmu-miR-3098-5p | 4.58 | 2.51 |
| mmu-miR-3081-3p | 8.47 | 2.51 |
| mmu-miR-8100 | 2.38 | 2.50 |
| mmu-miR-6997-3p | 6.16 | 2.49 |
| mmu-miR-6957-3p | 2.09 | 2.49 |
| mmu-miR-7647-5p | 3.87 | 2.48 |
| mmu-miR-710 | 2.48 | 2.48 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-5118 | 2.17 | 2.48 |
| mmu-miR-125a-3p | 3.45 | 2.48 |
| mmu-miR-6404 | 6.04 | 2.47 |
| mmu-miR-7027-5p | 3.64 | 2.47 |
| mmu-miR-7002-3p | 10.66 | 2.45 |
| mmu-miR-7024-5p | 2.13 | 2.45 |
| mmu-miR-7079-5p | 3.11 | 2.45 |
| mmu-miR-344f-5p | 3.64 | 2.45 |
| mmu-miR-6978-5p | 4.50 | 2.43 |
| mmu-miR-7074-5p | 3.71 | 2.43 |
| mmu-miR-762 | 4.87 | 2.43 |
| mmu-miR-668-3p | 2.87 | 2.43 |
| mmu-miR-1249-3p | 2.73 | 2.42 |
| mmu-miR-6958-3p | 2.14 | 2.42 |
| mmu-miR-3104-5p | 2.31 | 2.42 |
| mmu-miR-5116 | 4.28 | 2.42 |
| mmu-miR-3070-5p | 2.28 | 2.40 |
| mmu-miR-6914-3p | 2.79 | 2.39 |
| mmu-miR-5129-5p | 2.08 | 2.38 |
| mmu-miR-6337 | 5.28 | 2.38 |
| mmu-miR-7225-3p | 4.48 | 2.38 |
| mmu-miR-5625-5p | 2.54 | 2.37 |
| mmu-miR-6394 | 2.64 | 2.37 |
| mmu-miR-188-5p | 2.46 | 2.37 |
| mmu-miR-1932 | 3.15 | 2.36 |
| mmu-miR-3081-5p | 3.34 | 2.36 |
| mmu-miR-6995-5p | 3.37 | 2.35 |
| mmu-miR-1188-5p | 2.54 | 2.35 |
| mmu-miR-6898-5p | 8.66 | 2.35 |
| mmu-miR-7016-3p | 3.54 | 2.34 |
| mmu-miR-3058-3p | 2.08 | 2.34 |
| mmu-miR-7082-3p | 2.42 | 2.34 |
| mmu-miR-3091-3p | 5.51 | 2.33 |
| mmu-miR-7653-5p | 7.33 | 2.33 |
| mmu-miR-6917-5p | 3.79 | 2.33 |
| mmu-miR-150-3p | 3.64 | 2.33 |
| mmu-miR-1957a | 2.41 | 2.33 |
| mmu-miR-224-3p | 2.48 | 2.32 |
| mmu-miR-5106 | 3.78 | 2.32 |
| mmu-miR-9768-5p | 2.62 | 2.32 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-7023-3p | 4.26 | 2.32 |
| mmu-miR-7065-5p | 2.88 | 2.32 |
| mmu-miR-8092 | 2.99 | 2.32 |
| mmu-miR-1945 | 5.41 | 2.31 |
| mmu-miR-504-5p | 3.85 | 2.31 |
| mmu-miR-7003-5p | 2.36 | 2.31 |
| mmu-miR-193b-3p | 2.50 | 2.31 |
| mmu-miR-3620-5p | 2.03 | 2.31 |
| mmu-miR-9769-5p | 2.62 | 2.31 |
| mmu-miR-7015-5p | 2.78 | 2.30 |
| mmu-miR-6954-5p | 2.64 | 2.30 |
| mmu-miR-3569-3p | 4.14 | 2.29 |
| mmu-miR-7077-3p | 4.12 | 2.29 |
| mmu-miR-7024-3p | 3.86 | 2.29 |
| mmu-miR-99b-3p | 6.83 | 2.28 |
| mmu-miR-6954-3p | 6.95 | 2.28 |
| mmu-miR-292a-3p | 3.08 | 2.27 |
| mmu-miR-208a-5p | 7.64 | 2.27 |
| mmu-miR-7020-3p | 2.98 | 2.25 |
| mmu-miR-6944-5p | 2.64 | 2.25 |
| mmu-miR-5127 | 3.04 | 2.25 |
| mmu-miR-7665-5p | 2.43 | 2.25 |
| mmu-miR-7681-5p | 2.65 | 2.25 |
| mmu-miR-6976-3p | 2.88 | 2.25 |
| mmu-miR-6935-5p | 4.18 | 2.24 |
| mmu-miR-7063-5p | 2.18 | 2.24 |
| mmu-let-7a-2-3p | 2.17 | 2.24 |
| mmu-miR-6986-5p | 5.38 | 2.23 |
| mmu-miR-7048-3p | 4.77 | 2.22 |
| mmu-miR-7093-5p | 5.60 | 2.22 |
| mmu-miR-8109 | 2.12 | 2.22 |
| mmu-miR-7031-3p | 2.77 | 2.22 |
| mmu-miR-3086-5p | 3.02 | 2.21 |
| mmu-miR-7020-5p | 2.13 | 2.21 |
| mmu-miR-5709-3p | 2.06 | 2.21 |
| mmu-miR-505-5p | 2.15 | 2.21 |
| mmu-miR-1668 | 2.49 | 2.21 |
| mmu-miR-1981-3p | 3.15 | 2.21 |
| mmu-miR-200c-3p | 2.32 | 2.20 |
| mmu-miR-7672-5p | 5.37 | 2.20 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
|---|---|---|
| mmu-miR-6367 | 29.00 | 2.19 |
| mmu-miR-1901 | 2.58 | 2.19 |
| mmu-miR-346-5p | 2.40 | 2.19 |
| mmu-miR-3085-3p | 2.67 | 2.18 |
| mmu-miR-7046-5p | 2.22 | 2.18 |
| mmu-miR-7655-5p | 6.08 | 2.18 |
| mmu-miR-451b | 6.01 | 2.18 |
| mmu-miR-666-5p | 2.40 | 2.18 |
| mmu-miR-7236-3p | 2.79 | 2.17 |
| mmu-miR-6952-3p | 3.20 | 2.16 |
| mmu-miR-7040-5p | 3.24 | 2.16 |
| mmu-miR-7220-3p | 3.56 | 2.15 |
| mmu-miR-7683-5p | 2.42 | 2.15 |
| mmu-miR-7234-3p | 3.31 | 2.15 |
| mmu-miR-804 | 2.81 | 2.15 |
| mmu-miR-8116 | 19.79 | 2.15 |
| mmu-miR-7044-3p | 4.98 | 2.14 |
| mmu-miR-6378 | 7.83 | 2.14 |
| mmu-miR-7045-3p | 2.58 | 2.14 |
| mmu-miR-6910-5p | 3.08 | 2.14 |
| mmu-miR-7666-5p | 9.62 | 2.14 |
| mmu-miR-425-3p | 2.52 | 2.14 |
| mmu-miR-7214-5p | 2.12 | 2.14 |
| mmu-miR-6919-5p | 5.35 | 2.13 |
| mmu-miR-326-5p | 3.00 | 2.13 |
| mmu-miR-7662-5p | 3.34 | 2.13 |
| mmu-miR-7238-3p | 4.13 | 2.12 |
| mmu-miR-5617-5p | 3.45 | 2.12 |
| mmu-miR-7222-3p | 8.06 | 2.11 |
| mmu-miR-874-3p | 2.83 | 2.09 |
| mmu-miR-6961-3p | 3.62 | 2.09 |
| mmu-miR-145a-3p | 3.26 | 2.09 |
| mmu-miR-345-3p | 6.38 | 2.09 |
| mmu-miR-5046 | 3.12 | 2.08 |
| mmu-miR-2137 | 2.22 | 2.07 |
| mmu-miR-7237-5p | 2.11 | 2.07 |
| mmu-miR-7213-3p | 4.59 | 2.07 |
| mmu-miR-7040-3p | 2.08 | 2.07 |
| mmu-miR-449a-3p | 2.55 | 2.06 |
| mmu-miR-191-3p | 4.07 | 2.06 |

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-702-3p | 4.40 | 2.05 |
| mmu-miR-501-5p | 2.37 | 2.05 |
| mmu-miR-363-3p | 2.34 | 2.05 |
| mmu-miR-7660-5p | 7.19 | 2.04 |
| mmu-miR-128-1-5p | 2.29 | 2.04 |
| mmu-miR-1934-5p | 3.29 | 2.04 |
| mmu-miR-7041-3p | 2.33 | 2.04 |
| mmu-miR-8120 | 2.46 | 2.03 |
| mmu-miR-6400 | 2.10 | 2.03 |
| mmu-miR-6988-3p | 3.33 | 2.02 |
| mmu-miR-205-3p | 3.18 | 2.01 |
| mmu-miR-6946-5p | 2.10 | 2.01 |
| mmu-miR-6956-3p | 2.64 | 2.01 |

## Table S6. Down-regulated Genes Linked to Mn Treatment

| Gene Symbol | MnD Fold Change | MnW Fold Change |
| --- | --- | --- |
| mmu-miR-219a-5p | -48.57 | -71.13 |
| mmu-miR-374c-5p | -9.89 | -13.27 |
| mmu-miR-290b-3p | 2.27 | -6.29 |
| mmu-miR-3089-5p | -2.38 | -5.44 |
| mmu-miR-7660-3p | -2.04 | -4.38 |
| mmu-miR-499-5p | -2.23 | -4.31 |
| mmu-miR-29c-3p | -2.70 | -4.19 |
| mmu-miR-30f | -5.78 | -4.10 |
| mmu-miR-468-3p | -2.58 | -3.84 |
| mmu-miR-216b-5p | -2.23 | -3.83 |
| mmu-miR-34a-5p | -3.77 | -3.50 |
| mmu-miR-3074-5p | -3.57 | -3.35 |
| mmu-miR-30a-5p | -3.52 | -3.10 |
| mmu-miR-23a-3p | -3.55 | -2.96 |
| mmu-miR-140-3p | -2.57 | -2.96 |
| mmu-miR-511-3p | -2.75 | -2.90 |
| mmu-miR-10a-5p | -2.64 | -2.85 |
| mmu-miR-223-3p | -2.53 | -2.80 |
| mmu-miR-29b-3p | -3.62 | -2.65 |
| mmu-miR-15b-5p | -2.04 | -2.64 |
| mmu-miR-7243-3p | -2.07 | -2.56 |
| mmu-miR-671-5p | -2.20 | -2.53 |
| mmu-miR-652-3p | -2.66 | -2.52 |
| mmu-miR-24-3p | -3.02 | -2.34 |
| mmu-miR-22-3p | -2.77 | -2.33 |
| mmu-miR-449a-5p | -2.19 | -2.25 |
| mmu-miR-30d-5p | -2.59 | -2.24 |
| mmu-miR-7012-5p | 2.22 | -2.16 |
| mmu-miR-669n | -2.34 | -2.14 |
| mmu-miR-20a-5p | -2.80 | -2.11 |
| mmu-miR-297c-5p | -2.08 | -2.10 |
| mmu-miR-299a-5p | -3.64 | -2.02 |