

S15 Table. The significant enrichment of KEGG pathways for target genes of miRNAs ($p \leq 0.001$).

| Pathway ID | Pathway description | S gene number | TS gene number | B gene number | TB gene number | Pvalue of Fisher's Exact |
|------------|--|---------------|----------------|---------------|----------------|--------------------------|
| ko03010 | Ribosome | 74 | 4,507 | 108 | 19,272 | 2.61E-23 |
| ko00350 | Tyrosine metabolism | 59 | 4,507 | 78 | 19,272 | 2.18E-22 |
| ko00983 | Drug metabolism - other enzymes | 46 | 4,507 | 54 | 19,272 | 1.04E-21 |
| ko00140 | Steroid hormone biosynthesis | 44 | 4,507 | 51 | 19,272 | 2.79E-21 |
| ko00190 | Oxidative phosphorylation | 81 | 4,507 | 132 | 19,272 | 1.03E-20 |
| ko00860 | Porphyrin and chlorophyll metabolism | 38 | 4,507 | 45 | 19,272 | 7.00E-18 |
| ko00520 | Amino sugar and nucleotide sugar metabolism | 54 | 4,507 | 78 | 19,272 | 1.06E-17 |
| ko03320 | PPAR signaling pathway | 80 | 4,507 | 142 | 19,272 | 2.50E-17 |
| ko00100 | Steroid biosynthesis | 28 | 4,507 | 30 | 19,272 | 5.25E-16 |
| ko00010 | Glycolysis / Gluconeogenesis | 66 | 4,507 | 112 | 19,272 | 7.09E-16 |
| ko00480 | Glutathione metabolism | 49 | 4,507 | 72 | 19,272 | 1.02E-15 |
| ko00982 | Drug metabolism - cytochrome P450 | 37 | 4,507 | 48 | 19,272 | 5.39E-15 |
| ko00240 | Pyrimidine metabolism | 93 | 4,507 | 189 | 19,272 | 7.44E-15 |
| ko00380 | Tryptophan metabolism | 44 | 4,507 | 65 | 19,272 | 4.01E-14 |
| ko04620 | Toll-like receptor signaling pathway | 80 | 4,507 | 158 | 19,272 | 7.67E-14 |
| ko00980 | Metabolism of xenobiotics by cytochrome P450 | 35 | 4,507 | 47 | 19,272 | 1.79E-13 |
| ko00040 | Pentose and glucuronate interconversions | 24 | 4,507 | 27 | 19,272 | 9.36E-13 |
| ko05012 | Parkinson's disease | 92 | 4,507 | 199 | 19,272 | 1.08E-12 |
| ko00830 | Retinol metabolism | 50 | 4,507 | 84 | 19,272 | 1.32E-12 |
| ko05140 | Leishmaniasis | 49 | 4,507 | 82 | 19,272 | 1.81E-12 |
| ko00632 | Benzoate degradation via CoA ligation | 24 | 4,507 | 28 | 19,272 | 5.09E-12 |
| ko04142 | Lysosome | 123 | 4,507 | 300 | 19,272 | 6.73E-12 |
| ko04612 | Antigen processing and presentation | 36 | 4,507 | 54 | 19,272 | 1.67E-11 |
| ko04744 | Phototransduction | 43 | 4,507 | 72 | 19,272 | 4.20E-11 |
| ko04111 | Cell cycle - yeast | 66 | 4,507 | 134 | 19,272 | 5.45E-11 |
| ko00051 | Fructose and mannose metabolism | 52 | 4,507 | 96 | 19,272 | 6.78E-11 |
| ko04130 | SNARE interactions in vesicular transport | 37 | 4,507 | 60 | 19,272 | 2.60E-10 |
| ko04146 | Peroxisome | 49 | 4,507 | 91 | 19,272 | 3.15E-10 |

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|---------|--|----|-------|-----|--------|----------|
| ko00770 | Pantothenate and CoA biosynthesis | 18 | 4,507 | 20 | 19,272 | 4.92E-10 |
| ko00030 | Pentose phosphate pathway | 31 | 4,507 | 48 | 19,272 | 1.41E-09 |
| ko00590 | Arachidonic acid metabolism | 39 | 4,507 | 68 | 19,272 | 1.76E-09 |
| ko00310 | Lysine degradation | 57 | 4,507 | 117 | 19,272 | 1.85E-09 |
| ko00500 | Starch and sucrose metabolism | 49 | 4,507 | 96 | 19,272 | 3.48E-09 |
| ko04140 | Regulation of autophagy | 20 | 4,507 | 25 | 19,272 | 3.52E-09 |
| ko00624 | 1- and 2-Methylnaphthalene degradation | 17 | 4,507 | 20 | 19,272 | 9.89E-09 |
| ko00071 | Fatty acid metabolism | 40 | 4,507 | 75 | 19,272 | 1.88E-08 |
| ko04740 | Olfactory transduction | 83 | 4,507 | 203 | 19,272 | 1.98E-08 |
| ko04950 | Maturity onset diabetes of the young | 30 | 4,507 | 50 | 19,272 | 3.17E-08 |
| ko05340 | Primary immunodeficiency | 20 | 4,507 | 27 | 19,272 | 3.57E-08 |
| ko05320 | Autoimmune thyroid disease | 16 | 4,507 | 19 | 19,272 | 3.62E-08 |
| ko00531 | Glycosaminoglycan degradation | 29 | 4,507 | 49 | 19,272 | 8.23E-08 |
| ko04610 | Complement and coagulation cascades | 55 | 4,507 | 123 | 19,272 | 1.46E-07 |
| ko04622 | RIG-I-like receptor signaling pathway | 42 | 4,507 | 85 | 19,272 | 1.47E-07 |
| ko00360 | Phenylalanine metabolism | 21 | 4,507 | 31 | 19,272 | 1.95E-07 |
| ko00450 | Selenoamino acid metabolism | 35 | 4,507 | 67 | 19,272 | 2.82E-07 |
| ko00260 | Glycine, serine and threonine metabolism | 35 | 4,507 | 67 | 19,272 | 2.82E-07 |
| ko00920 | Sulfur metabolism | 13 | 4,507 | 15 | 19,272 | 3.98E-07 |
| ko00790 | Folate biosynthesis | 15 | 4,507 | 19 | 19,272 | 4.87E-07 |
| ko04672 | Intestinal immune network for IgA production | 15 | 4,507 | 19 | 19,272 | 4.87E-07 |
| ko00053 | Ascorbate and aldarate metabolism | 22 | 4,507 | 35 | 19,272 | 7.10E-07 |
| ko00052 | Galactose metabolism | 38 | 4,507 | 78 | 19,272 | 8.94E-07 |
| ko00740 | Riboflavin metabolism | 22 | 4,507 | 36 | 19,272 | 1.42E-06 |
| ko00511 | Other glycan degradation | 15 | 4,507 | 20 | 19,272 | 1.52E-06 |
| ko05310 | Asthma | 9 | 4,507 | 9 | 19,272 | 2.08E-06 |
| ko00710 | Carbon fixation in photosynthetic organisms | 25 | 4,507 | 45 | 19,272 | 3.25E-06 |
| ko00120 | Primary bile acid biosynthesis | 16 | 4,507 | 23 | 19,272 | 3.41E-06 |
| ko03018 | RNA degradation | 15 | 4,507 | 21 | 19,272 | 4.17E-06 |
| ko00750 | Vitamin B6 metabolism | 10 | 4,507 | 11 | 19,272 | 4.21E-06 |
| ko00460 | Cyanoamino acid metabolism | 18 | 4,507 | 28 | 19,272 | 4.66E-06 |
| ko00903 | Limonene and pinene degradation | 22 | 4,507 | 38 | 19,272 | 5.05E-06 |

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|---------|---|-----|-------|-----|--------|----------|
| ko00340 | Histidine metabolism | 28 | 4,507 | 54 | 19,272 | 5.21E-06 |
| ko04621 | NOD-like receptor signaling pathway | 34 | 4,507 | 71 | 19,272 | 5.38E-06 |
| ko00642 | Ethylbenzene degradation | 11 | 4,507 | 13 | 19,272 | 5.47E-06 |
| ko05330 | Allograft rejection | 11 | 4,507 | 13 | 19,272 | 5.47E-06 |
| ko02020 | Two-component system | 11 | 4,507 | 13 | 19,272 | 5.47E-06 |
| ko00521 | Streptomycin biosynthesis | 13 | 4,507 | 17 | 19,272 | 5.55E-06 |
| ko04115 | p53 signaling pathway | 71 | 4,507 | 188 | 19,272 | 6.38E-06 |
| ko00410 | beta-Alanine metabolism | 23 | 4,507 | 41 | 19,272 | 6.43E-06 |
| ko00281 | Geraniol degradation | 8 | 4,507 | 8 | 19,272 | 8.90E-06 |
| ko00601 | Glycosphingolipid biosynthesis - lacto and neolacto ser | 30 | 4,507 | 61 | 19,272 | 9.71E-06 |
| ko00760 | Nicotinate and nicotinamide metabolism | 27 | 4,507 | 53 | 19,272 | 1.17E-05 |
| ko00563 | Glycosylphosphatidylinositol | 19 | 4,507 | 32 | 19,272 | 1.36E-05 |
| ko00400 | Phenylalanine, tyrosine and tryptophan biosynthesis | 9 | 4,507 | 10 | 19,272 | 1.64E-05 |
| ko00603 | Glycosphingolipid biosynthesis - globo series | 12 | 4,507 | 16 | 19,272 | 1.83E-05 |
| ko05130 | Pathogenic Escherichia coli infection | 61 | 4,507 | 160 | 19,272 | 1.98E-05 |
| ko00960 | Tropane, piperidine and pyridine alkaloid biosynthesis | 14 | 4,507 | 21 | 19,272 | 3.03E-05 |
| ko04614 | Renin-angiotensin system | 15 | 4,507 | 24 | 19,272 | 4.82E-05 |
| ko00130 | Ubiquinone and other terpenoid-quinone biosynthesis | 8 | 4,507 | 9 | 19,272 | 6.35E-05 |
| ko05210 | Colorectal cancer | 76 | 4,507 | 217 | 19,272 | 6.52E-05 |
| ko00430 | Taurine and hypotaurine metabolism | 14 | 4,507 | 22 | 19,272 | 6.53E-05 |
| ko03440 | Homologous recombination | 23 | 4,507 | 46 | 19,272 | 7.52E-05 |
| ko04110 | Cell cycle | 115 | 4,507 | 358 | 19,272 | 8.76E-05 |
| ko00280 | Valine, leucine and isoleucine degradation | 37 | 4,507 | 89 | 19,272 | 1.04E-04 |
| ko00680 | Methane metabolism | 12 | 4,507 | 18 | 19,272 | 1.15E-04 |
| ko04623 | Cytosolic DNA-sensing pathway | 20 | 4,507 | 39 | 19,272 | 1.40E-04 |
| ko04210 | Apoptosis | 76 | 4,507 | 222 | 19,272 | 1.51E-04 |
| ko03020 | RNA polymerase | 29 | 4,507 | 66 | 19,272 | 1.80E-04 |
| ko03410 | Base excision repair | 26 | 4,507 | 57 | 19,272 | 1.84E-04 |
| ko00950 | Isoquinoline alkaloid biosynthesis | 10 | 4,507 | 14 | 19,272 | 1.88E-04 |
| ko03040 | Spliceosome | 19 | 4,507 | 37 | 19,272 | 2.01E-04 |
| ko00930 | Caprolactam degradation | 8 | 4,507 | 10 | 19,272 | 2.52E-04 |
| ko05332 | Graft-versus-host disease | 8 | 4,507 | 10 | 19,272 | 2.52E-04 |

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|---------|---|-----|-------|-------|--------|----------|
| ko00604 | Glycosphingolipid biosynthesis - ganglio series | 18 | 4,507 | 35 | 19,272 | 2.87E-04 |
| ko00600 | Sphingolipid metabolism | 41 | 4,507 | 106 | 19,272 | 2.99E-04 |
| ko05142 | Chagas disease | 90 | 4,507 | 277 | 19,272 | 3.17E-04 |
| ko05212 | Pancreatic cancer | 74 | 4,507 | 220 | 19,272 | 3.34E-04 |
| ko00626 | Naphthalene and anthracene degradation | 12 | 4,507 | 20 | 19,272 | 4.85E-04 |
| ko04080 | Neuroactive ligand-receptor interaction | 312 | 4,507 | 1,138 | 19,272 | 6.30E-04 |
| ko04060 | Cytokine-cytokine receptor interaction | 87 | 4,507 | 272 | 19,272 | 6.90E-04 |
| ko00232 | Caffeine metabolism | 5 | 4,507 | 5 | 19,272 | 6.98E-04 |
| ko04710 | Circadian rhythm - mammal | 12 | 4,507 | 21 | 19,272 | 8.91E-04 |
| ko00330 | Arginine and proline metabolism | 52 | 4,507 | 149 | 19,272 | 9.43E-04 |
| ko04670 | Leucyte transendothelial migration | 157 | 4,507 | 538 | 19,272 | 9.67E-04 |
