**Supplementary Tables**

**Table 1: Primers used for gene expression and mtDNA copy number analyses.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gene** | **Access No.** |  | **Primer sequence** |
| **IRS1** | [**NM\_012969.2**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=1937369480) | **F** | 5'- ATCTTCCTTTGGCGCAGCTA -3' |
| **R** | 5'- CAGCACGAAAAAGCGCTTA -3' |
| **IRS2** | [**NM\_001168633.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=274323810) | **F** | 5'- CCCCAGTGTCCCCATCCT -3' |
| **R** | 5'- TTTCCTGAGAGAGACGTTTTCCA -3' |
| **AMPK** | **NM\_023991.1** | **F** | 5'- GTGGTGTTATCCTGTATGCCCTTCT -3' |
| **R** | 5'- CTGTTTAAACCATTCATGCTCTCGT -3' |
| **mTOR** | [**NM\_019906.2**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=1935257123) | **F** | 5'- TTGGAGTGGCTGGGTGCTGA -3' |
| **R** | 5'- AAGGGCTGAACTTGCTGGAA -3' |
| **GSK-3β** | [**NM\_032080.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=14091769) | **F** | 5'- GGAACTCCAACAAGGGAGCA -3' |
| **R** | 5'- TTCGGGGTCGGAAGACCTTA -3' |
| **WNT3a** | [**NM\_001107005.2**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=404501507) | **F** | 5'- TCTGCCATGAACCGTCACAACAAT -3' |
| **R** | 5'- CCAGCAGGTCTTCACTTCGCAACT -3' |
| **β-catenin** | [**NM\_053357.2**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=46048608) | **F** | 5'- CTTACGGCAATCAGGAAAGC -3' |
| **R** | 5'- GACAGACAGCACCTTCAGCA -3' |
| **FOXO1** | [**NM\_001191846.3**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=1972711980) | **F** | 5'- CGCAGATCTACGAGTGGATGGT -3' |
| **R** | 5'-GCTCGGCTTCGGCTCTTA-3' |
| **Kim-1** | [**AF035963.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=2665891) | **F** | 5'-CGCAGAGAAACCCGACTAAG -3' |
| **R** | 5'-CAAAGCTCAGAGAGCCCATC-3' |
| **Lipocalin-2** | [**NM\_130741.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=18543344) | **F** | 5'-GGAATATTCACAGCTACCCTC -3' |
| **R** | 5'-TTGTTATCCTTGAGGCCCAG-3' |
| **18S rRNA** | [**NR\_046237.2**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=1937935966) | **F** | 5'- GTAACCCGTTGAACCCCATT -3' |
| **R** | 5'- CAAGCTTATGACCCGCACTT -3' |
| **Genomic PGC-1α** | [**NM\_031347.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=13786187) | **F** | 5'- GTGCAGCCAAGACTCTGTATGG -3' |
| **R** | 5'- GTCCAGGTCATTCACATCAAGTTC -3' |
| **mtDNA** | [**X14848.1**](https://www.ncbi.nlm.nih.gov/entrez/viewer.fcgi?db=nucleotide&id=854269) | **F** | 5'- ACACCAAAAGGACGAACCTG -3' |
| **R** | 5'- ATGGGGAAGAAGCCCTAGAA -3' |

**Table 2: Effect of different treatments on oral glucose tolerance test (OGTT) in diabetic rats.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Experimental Groups** | **Blood glucose (mg/dL)** | | | | | **AUC** |
| **0 minute** | **30 minutes** | **60 minutes** | **90 minutes** | **120 minutes** |  |
| **Control** | 74.5±10.2 | 135.3±15.1 | 123.6±11.9 | 113.2±13.4 | 95.1±10.0 | 225.9±24 |
| **Untreated diabetic** | 222.0±86.1a | 437.3±48.4 a | 433.7±52.9 a | 427.3±60.1 a | 421.3±59.6 a | 810±115 a |
| **Metformin** | 114.4±4.1 ab | 210.6±10.9 ab | 188.7±9.6 ab | 176.2±6.9 ab | 143.1±5.4 ab | 346.9±36.49b |
| **SPIONs** (1 dose/week) | 83.8±8.1 bc | 249.4±17.9 abc | 226.0±16.7 abc | 199.6±15.5 abc | 157.0±14.3 ab | 393.6±30.6b |
| **SPIONs** (2 doses/week) | 81.0±6.4 bc | 237.3±25.9 ab | 213.0±21.1 abc | 197.3±18.3 abc | 135.0±10.5 abd | 301.2±35.6b |