**Ha *et al*. miR-10a/b-5p-NCOR2 Regulates Insulin-Resistant Diabetes in Female Mice**

**The supporting information contain the following items:**

Supplementary Table 1–3

**Supplementary Table 1.** Body weight and food intake in HFHSD mice after the injections of E2 or miR-10a/b mimic (mean ± SD)

(A) Body weight

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Group** |  | **Diet** | **Body weight (g)** | | | | | | | **Change of body weight (g)**  **(Before vs. PI 6W)** | ***P* value\*** |
| **Before** | **PI 1W** | **PI 2W** | **PI 3W** | **PI 4W** | **PI 5W** | **PI 6W** |
| No injection | OVX | ND | 30.1±0.8 | 30.7±0.9 | 31.4±1.5 | 32.4±2.2 | 31.9±1.3 | 31.5±0.4 | 32.6±1.4 | 2.5±0.8 | 0.0542 |
| Scrambled RNA | OVX | ND | 31.9±1.5 | 30.1±2.2 | 31.5±1.3 | 32.4±1.4 | 32.2±1.1 | 32.6±0.5 | 32.9±0.2 | 1.0±1.1 | 0.1011 |
| E2 | OVX | ND | 31.5±1.6 | 32.9±2.8 | 33.1±3.1 | 33.6±4.4 | 33.9±3.6 | 33.8±4.1 | 34.2±1.4 | 2.7±0.6 | 0.0863 |
| miR-10a-5p mimic | OVX | ND | 31.7±2.1 | 31.1±2.1 | 32.6±1.5 | 32.8±2.3 | 33.2±5.1 | 33.5±2.6 | 33.9±3.0 | 2.2±1.3 | 0.2476 |
| miR-10b-5p mimic | OVX | ND | 30.7±2.1 | 31.3±2.7 | 32.3±1.4 | 32.8±1.9 | 33.6±1.0 | 34.2±0.9 | 34.3±2.1 | 3.6±1.4 | 0.1210 |
| No injection | OVX | HFHSD | 48.7±3.8 | 49.4±3.3 | 49.7±5.1 | 50.2±5.1 | 50.6±5.4 | 51.1±2.4 | 52.6±3.6 | 3.9±2.2 | 0.0812 |
| Scrambled RNA | OVX | HFHSD | 49.6±2.6 | 49.8±2.7 | 50.6±2.5 | 51.2±2.0 | 51.8±1.9 | 52.3±1.3 | 52.5±1.4 | 2.9±1.8 | 0.1090 |
| E2 | OVX | HFHSD | 47.2±3.6 | 46.9±2.3 | 47.7±2.7 | 48.1±3.6 | 48.6±2.1 | 49.0±1.0 | 49.9±1.3 | 2.7±0.9 | 0.0762 |
| miR-10a-5p mimic | OVX | HFHSD | 48.8±4.9 | 49.0±4.7 | 49.7±3.4 | 50.1±3.9 | 50.4±3.7 | 50.7±2.3 | 51.4±2.2 | 2.6±1.0 | 0.0563 |
| miR-10b-5p mimic | OVX | HFHSD | 47.1±2.4 | 48.1±1.8 | 48.4±3.9 | 49.8±3.9 | 49.2±2.5 | 50.0±2.1 | 50.2±1.5 | 3.1±1.3 | 0.0618 |

n=5-7 per group

*\*p* < 0.05, *\*\*p* < 0.01, versus before injection or given no injection in OVX HFHSD fed-female mice.

#PI, Post injection; W, week; OVX, ovariectomized; ND, a normal diet; HFHSD, a high-fat, high-sucrose diet; E2, 17β-estradiol (E2)

(B)Food intake

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Group** |  | **Diet** | **Food intake (g/day)** | | | ***P* value\*** |
| **Before** | **PI 1W** | **PI 3W** |
| No injection | OVX | ND | 4.1±1.3 | 3.6±0.4 | 3.7±0.7 | 0.5011 |
| Scrambled RNA | OVX | ND | 3.5±0.3 | 4.0±0.5 | 3.8±0.3 | 0.1002 |
| E2 | OVX | ND | 3.8±0.4 | 3.9±0.6 | 4.2±0.2 | 0.0514 |
| miR-10a-5p mimic | OVX | ND | 3.5±0.6 | 3.9±0.4 | 3.3±0.6 | 0.0632 |
| miR-10b-5p mimic | OVX | ND | 4.3±0.5 | 4.0±0.4 | 3.6±0.4 | 0.0507 |
| No injection | OVX | HFHSD | 5.6±8.7 | 6.0±0.2 | 5.8±0.3 | 0.2544 |
| Scrambled RNA | OVX | HFHSD | 6.1±0.1 | 5.6±0.3 | 5.8±0.2 | 0.0653 |
| E2 | OVX | HFHSD | 6.0±0.8 | 5.8±0.5 | 6.0±1.3 | 0.5874 |
| miR-10a-5p mimic | OVX | HFHSD | 4.7±1.5 | 4.8±0.6 | 5.1±0.1 | 0.2052 |
| miR-10b-5p mimic | OVX | HFHSD | 5.1±0.7 | 4.9±0.3 | 5.3±0.4 | 0.3220 |

n=3 per group

*\*p* < 0.05, *\*\*p* < 0.01, versus before injection or given no injection in OVX HFHSD fed-female mice.

**Supplementary Table 2.** Clinical characteristics of female patients with type 2 diabetes and healthy donors

|  |  |  |
| --- | --- | --- |
| **Parameters** | **Diabetes** | **Healthy control** |
| Number of cases, n | 37 | 32 |
| Age (years) | 55 ± 6 | 43 ± 11 |
| A1C (%) | 8.0 ± 1.8 | 5.4 ± 0.5 |
| Glucose (mg/dL) | 161.6 ± 56.5 | 89.4 ± 11.0 |
| Insulin (ng/mL) | 2.35 ± 0.17 | 0.89 ± 0.4 |
| C-peptide (ng/mL) | 2.1 ± 0.6 | 1.7 ± 0.7 |
| BMI (kg/m2) | 23.7 ± 3.2 | 22.2 ± 3.5 |

**Supplementary Table 3.** Primary antibodies used in this study

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Vendor (Item #)** | **Host** | **Clonality** | **MW** | **Concentration** |
| p-AKT(Ser473) | ThermoFisher (44-621G) | Rabbit | Polyclonal | 55 | 1:200 WES |
| Insulin | Abcam (ab181547) | Rabbit | Monoclonal | 12 | 1:100 IHC, 1:200 WES |
| Insulin receptor | ThermoFisher (PA5-27334) | Rabbit | Polyclonal | 156 | 1:150 WES |
| NCOR2 | Invitrogen (PA1-843) | Rabbit | Polyclonal | 250 | 1:50 WES |
| GAPDH | Cell signaling (S2118) | Rabbit | Polyclonal | 36 | 1:500 WES |