| Gene                        | Forward Primer (5’ to 3’)                  | Reverse Primer (5’ to 3’)                  |
|-----------------------------|--------------------------------------------|--------------------------------------------|
| Hypertrophy-related gene    |                                            |                                            |
| β-MHC                       | CGAGTCCCAGGTCAACAAG                       | AGGCTCTTTTCTGCTTGACC                      |
| Fibrosis-related gene       |                                            |                                            |
| α-SMA                      | GCAACACAGGAATACGCAGAAGC                   | GCTTTGGGCGAGGATGATTG                     |
| Collagen I                  | GAGCGGAGAGTACTGGATCG                     | TACCTGAACCGGAAATCCATC                    |
| Collagen III                | ACGTAAAGCCTGGTGGACAG                     | GGAGGGCCATAGCTGAACTG                     |
| Smad3                       | CCTCTCTGTTGCTCCATCTCC                    | ACCCTTCCCAATGTTGCG                       |
| Smad7                       | CCTCGGAAGTCAAGAGGCTG                     | CAGCCTGCAGTTGCTTGAG                     |
| TGF-β                       | CTGTCCAACAATAGGCTCG                      | AGACAGCCACTCAGGCGAT                     |
| Inflammation-related gene   |                                            |                                            |
| MCP-1                       | CAGGTCCCAGTGGCACTCATGCTTC                | TCTGGACCACCATTCTCTCTTTG                  |
| IL-6                        | CTTCATTCACTGAGCTCTCTTTG                  | AATTAAGCCTCCGACTTTGGAAGTGGTGAAG         |
| IL-1α                       | TGGTGTTGACGTTCCATCTCTT                   | TCCTTTGCTGGTTCTCTTT                      |
| IL-18                       | GCCGACTTCACTGTACAACCG                    | GAGGTCACAGCCACTGGCCTC                    |
| TNF-α                       | AGGGCTGTGGGACCTAAATGT                   | ATGGGAGTGATGATTGCGGCAGCAG               |
| Metabolism-related gene     |                                            |                                            |
| CD36                        | CGGAACTGTGGGCTCATATTG                    | GCATGAGAATGCTCTCAACAC                   |
| CPT1B                       | GTGCAAGCAGCCCCTGCAG                     | TTGGCGGAGTACATGATCAT                    |
| FABP-pm                     | CGAGCAGGGGATCAATGCTCT                   | CCGTACAGGCCATCTTCTT                     |
| FABP3                       | ACTCGGTGTGGGCTTTGCT                     | ATGATGTTAGGCTGGTCTGATGT                 |
| GLUT1                       | GTGTAATCTGTTGCTCTCTT                    | GCCCTTCGAAGCACACTCTT                    |
| GLUT4                       | ATGGCTGTGCCTGCTGTCTTC                   | ACCCATGCCAATGAGAAGT                    |
| HK2                         | GGAACCCAGCTGTTGACC                      | CAGGGGACGAGGAAGTGGAAA                   |
| PDK4                        | AGCTGTGTAAGAGTACAAAT                    | TCTGGTTGAGAGCTGCTGATGT                 |
| PFKM                        | GCCATCCGCTGTGAGGAC                      | GCCCTGAGGGCGACTT                       |
| PGC1α                       | CGGAAACATCATACACCAGC                    | TGAAGGAGGCTAGCAAAGTTTGT                 |
| PKM2                        | TGAACCTGCGCCTCATCA                     | GCAGGGCAGATGGTACCAAT                   |
| β-actin                     | ACCTCTATGCGCAAACACGT                   | GGAACCTACGTACTCCTGCT                    |

β-MHC, β-cardiac myosin heavy chain; α-SMA, α-smooth muscle actin; Smad, drosophila mothers against decapentaplegic protein; TGF-β, transform growth factor-β; MCP-1, monocyte chemoattractant protein-1; IL, interleukin; TNF-α, tumor necrosis factor-α; CD36, FAT; CPT1B, carnitine palmitoyltransferase-1B; FABP-pm, plasma membrane fatty acid-binding protein; FABP3, fatty acid binding protein 3; GLUT, glucose transporter; HK2, hexokinase2; PDK4, pyruvate dehydrogenase kinase 4; PFKM, phosphofructokinase; PGC1α, peroxisome proliferator-activated receptor γ coactivator 1α; PKM2, pyruvate kinase isozyme type M2.
| Parameter                          | STD (n = 10) | STD + LCA (n = 10) | HFD (n = 10) | HFD + LCA (n = 10) |
|-----------------------------------|--------------|--------------------|--------------|--------------------|
| **Echocardiography**              |              |                    |              |                    |
| Aorta root (mm)                   | 1.68 ± 0.03  | 1.64 ± 0.07        | 1.70 ± 0.05  | 1.73 ± 0.07        |
| IVS<sub>d</sub> (mm)              | 0.85 ± 0.03  | 0.91 ± 0.05        | 0.97 ± 0.05* | 1.06 ± 0.04†       |
| IVS<sub>s</sub> (mm)              | 1.18 ± 0.06  | 1.37 ± 0.06*       | 1.45 ± 0.05* | 1.43 ± 0.05        |
| LVID<sub>d</sub> (mm)             | 3.64 ± 0.06  | 3.63 ± 0.13        | 3.58 ± 0.10  | 3.42 ± 0.08        |
| LVID<sub>s</sub> (mm)             | 2.45 ± 0.09  | 2.48 ± 0.72        | 2.31 ± 0.14  | 2.34 ± 0.15        |
| LVPW<sub>d</sub> (mm)             | 0.70 ± 0.03  | 0.77 ± 0.04        | 0.87 ± 0.05* | 0.75 ± 0.05†       |
| LVPW<sub>s</sub> (mm)             | 1.20 ± 0.08  | 1.03 ± 0.06†       | 1.28 ± 0.07  | 1.20 ± 0.09        |
| LV mass (mg)                      | 96.05 ± 4.46 | 107.98 ± 6.87      | 121.29 ± 7.02* | 108.89 ± 5.60†    |
| Corrected LV mass (mg)            | 76.84 ± 3.57 | 86.38 ± 5.50       | 97.12 ± 5.60* | 87.11 ± 4.48†     |
| EF (%)                            | 61.84 ± 2.43 | 60.00 ± 5.74       | 64.65 ± 2.83 | 60.34 ± 4.38       |
| FS (%)                            | 27.56 ± 4.85 | 32.92 ± 3.23       | 35.20 ± 2.20 | 32.20 ± 3.23       |
| **Surface ECG**                   |              |                    |              |                    |
| PR interval (ms)                  | 51.68 ± 2.78 | 44.76 ± 1.67       | 47.85 ± 3.42 | 44.25 ± 3.00       |
| QRS duration (ms)                 | 25.83 ± 0.96 | 20.05 ± 0.87*      | 25.00 ± 1.37 | 19.32 ± 1.90†      |
| QT<sub>B</sub> interval (ms)      | 110.68 ± 2.77 | 89.02 ± 4.27*     | 115.82 ± 3.19 | 93.38 ± 9.45†     |

n = 10 per group. One-way ANOVA was used to compare STD, STD + LCA, HFD, and HFD + LCA group data. The data were expressed as mean ± SEM. *P < .05 vs STD, †P < .05 vs HFD. AF, atrial fibrillation; AO, aortic root diameter; ECG, electrocardiogram; EF, ejection fraction; FS, fraction shortening; HFD, high-fat diet; IVS<sub>d</sub>, end-diastolic inter-ventricular septum thickness; IVS<sub>s</sub>, end-systolic inter-ventricular septum thickness; LCA, L-carnitine; LV, left ventricle; LVID<sub>d</sub>, end-diastolic LV internal dimension; LVID<sub>s</sub>, end-systolic LV internal dimension; LVPW<sub>d</sub>, end-diastolic LV posterior wall thickness; LVPW<sub>s</sub>, end-systolic LV posterior wall thickness; STD, standard diet.