Supplementary Material

**Fig. 1S** Lineage tracing strategy for Isl1 + cardiac progenitor cells.
**Table 15**  All primers used in the study.

<table>
<thead>
<tr>
<th>Primer name</th>
<th>Oligonucleotide sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>sgRNA</td>
<td></td>
</tr>
<tr>
<td>Isl1–5arm-F</td>
<td>5′-TCG AGG TCA TCG ATA ATG TAA CCC ATT TCT TTG TCT-3′</td>
</tr>
<tr>
<td>Isl1–5arm-R</td>
<td>5′-AGG GCC CAT GGT GGC ATC TGT AAG AGG GAG TAA TG-3′</td>
</tr>
<tr>
<td>Isl1–3arm-F</td>
<td>5′-ATG GGA CAC ATG GGC CAT C-3′</td>
</tr>
<tr>
<td>Isl1–3arm-R</td>
<td>5′-TAG AAC TAG TGG ATC TCA AAT GAA AAT AAA TGC A-3′</td>
</tr>
<tr>
<td>CreERT2-F</td>
<td>5′-GCC ACC ATG GCC TCC ATT TT-3′</td>
</tr>
<tr>
<td>CreERT2-R</td>
<td>5′-GCC CAT GTC TCC CAT TCC CCA GCA TGC CTA TT-3′</td>
</tr>
<tr>
<td>Isl1-id-F</td>
<td>5′-GGG GCC CCC AAA ATA ATG TAA GT-3′</td>
</tr>
<tr>
<td>Isl1-id-R</td>
<td>5′-GGG GCC CCC AAA ATA ATG TAA GT-3′</td>
</tr>
<tr>
<td>Primers for genotyping</td>
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<tr>
<td>Cre-F</td>
<td>5′-AGCGATGGATTCEGTCTCCTG-3′</td>
</tr>
<tr>
<td>Cre-R</td>
<td>5′-AGCTTGATCATCTCCGGTATGAA-3′</td>
</tr>
<tr>
<td>Isl1-F</td>
<td>5′-GCCGCTCTAAGGTGACACCATC-3′</td>
</tr>
<tr>
<td>Isl1-R</td>
<td>5′-TCATGATGCTGGTTCTTGTCCCTT-3′</td>
</tr>
<tr>
<td>β-actin-F</td>
<td>5′-GGC GGTATCCCCTCCATCG-3′</td>
</tr>
<tr>
<td>β-actin-R</td>
<td>5′-CCATTTGTTAACAAATGCCCATCT-5′</td>
</tr>
<tr>
<td>Primers for RT-PCR</td>
<td></td>
</tr>
<tr>
<td>Isl1–445-F</td>
<td>GCCGCTCTAACGCTGACCACATC</td>
</tr>
<tr>
<td>Isl1–445-R</td>
<td>TCATGATCGTGGTTCTTGTCCCTT</td>
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<tr>
<td>Cre-ki-F</td>
<td>CTGACGTTGGAGGAGATGTAAT</td>
</tr>
<tr>
<td>Cre-ki-R</td>
<td>CATCGCTCGACGAGATTGAT</td>
</tr>
<tr>
<td>PCNA-F</td>
<td>TTGACGTATATGCGGAGACC</td>
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<tr>
<td>PCNA-R</td>
<td>CGTGAACAGCTCAGATCCCTCTCTC</td>
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<tr>
<td>Cyclin-D1-F</td>
<td>GCGTACCCTGACACAAATCC</td>
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<tr>
<td>Cyclin-D1-R</td>
<td>CTGCTCTGACACTGCTGCCCTGTGCTC</td>
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<tr>
<td>β-actin-F</td>
<td>5′-GGC GTG ATT CCC CTC CAT CG-3′</td>
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<tr>
<td>β-actin-R</td>
<td>5′-CCA GTT GGT AAC AAT GCC ATG T-5′</td>
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</tbody>
</table>

**Table 25**  Details of primary antibodies.

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Manufacturer</th>
<th>Catalog number</th>
</tr>
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<tbody>
<tr>
<td>Chicken anti-lacZ</td>
<td>Abcam</td>
<td>ab9361</td>
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<tr>
<td>Rabbit anti-Islet1</td>
<td>Abcam</td>
<td>ab20670</td>
</tr>
<tr>
<td>Rabbit anti-CD31</td>
<td>Abcam</td>
<td>ab8364</td>
</tr>
<tr>
<td>Mouse anti-SM</td>
<td>Abcam</td>
<td>ab683</td>
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<tr>
<td>Rabbit anti-TNN13</td>
<td>Abcam</td>
<td>ab47003</td>
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<tr>
<td>Rabbit anti-Ki67</td>
<td>Abcam</td>
<td>ab15580</td>
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</table>

**Table 25**  Details of secondary antibodies.

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Manufacturer</th>
<th>Catalog number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donkey anti-chicken IgG (Cy3)</td>
<td>Jackson</td>
<td>703–165–155</td>
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<tr>
<td>Goat anti-rabbit (Alexa Fluor 647)</td>
<td>Beyotime (China)</td>
<td>A0468</td>
</tr>
<tr>
<td>Goat anti-rabbit (FITC)</td>
<td>Beyotime (China)</td>
<td>A0562</td>
</tr>
<tr>
<td>Goat anti-mouse (FITC)</td>
<td>Beyotime (China)</td>
<td>A0568</td>
</tr>
</tbody>
</table>

**Table 45**  Aerobic exercise protocol (75% maximum heart rate).

<table>
<thead>
<tr>
<th>Week</th>
<th>Speed (m/min)</th>
<th>Slope (%)</th>
<th>Time (min)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>10 (gradual increase)</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>0</td>
<td>60</td>
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<tr>
<td>5</td>
<td>15</td>
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<td>60</td>
</tr>
<tr>
<td>6</td>
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<tr>
<td>7</td>
<td>15</td>
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</tr>
<tr>
<td>8</td>
<td>15</td>
<td>0</td>
<td>60</td>
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</tbody>
</table>

**Fig. 25**  
Ki67+ cells number were observed in exercise group, but not in control group.

**Zhou Y et al. Fate Tracing of Isl1+Cells... Int J Sports Med**