**Supplementary file 4. Characterization of established clones.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Clones | Parental cells | Proliferation capacity | Expression of ISL1 | Conversion efficiency to iMNs | RNA-Seq |
| HF1-iMNIC2 | HF1 | P15~ | + | \*\*\* | √ |
| HF1-iMNIC5 | P18~ | + | \*\*\* |  |
| HF1-iMNIC6 | P10~ | + | \*\* |  |
| HF1-iMNIC7 | P10~ | + | \*\* |  |
| HF1-iMNIC11 | P10~ | + | \* |  |
| HF1-iMNIC12 | P10~ | + | \*\*\* |  |
| HF1-iMNIC1 | HF2 | P10~ | + | \*\* |  |
| HF2-iMNIC2 | P10~ | + | \* |  |
| HF2-iMNIC4 | P10~ | + | \*\* |  |
| HF2-iMNIC6 | P16~ | + | \*\*\* | √ |
| HF2-iMNIC8 | P12~ | + | \*\*\* |  |

The gene expression of ISL1 was analyzed by qRT-PCR. “+” means positive expression.

Yields of HB9+iMN is represented by “\*” (~70%). “\*\*” (~80%), and “\*\*\*” (~90%).