

## Supplementary Information

Table S1:

| qPCR primer    |                           |                            |
|----------------|---------------------------|----------------------------|
| name           | Forward primer            | Reverse primer             |
| SOX2           | CCCAGCAGACTTCACATGT       | CCTCCCATTTCCCTCGTTTT       |
| OCT4           | CCTCACTTCACTGCACTGTA      | CAGGTTTTCTTTCCCTAGCT       |
| NANOG          | TGAACCTCAGCTACAAACAG      | TGGTGGTAGGAAGAGTAAAG       |
| TRA-1-60       | TCATCATCACCATCGTCTG       | GTAACCATTCTCCACTGTCT       |
| SALL4          | ATCCACCTGTCCTCATCA        | GGGCTGTCTCTGTCTTTAG        |
| LIN28A         | CCTGGTGGAGTATTCTGTATT     | ATATGGCTGATGCTCTGG         |
| DPPA2          | TGGATAGCAGCAAGAAGAAT      | AAGTAGATGACCTGGATTGTATT    |
| TDGF1          | CTTCTACGGACGGAAGCTG       | TGCTCATCCATCACAAGG         |
| GDF3           | GTGGCAGAGGTTCTTACAA       | TCCTGGAGATACTGGTCAA        |
| GAPDH          | GTGGACCTGACCTGCCGTCT      | GGAGGAGTGGGTGTCGCTGT       |
| TNNT2          | TTCACCAAAGATCTGCTCCTCGCT  | TTATTACTGGTGTGGAGTGGGTGTGG |
| NKX2.5         | CAAGTGTGCGTCTGCCTTT       | CAGCTCTTTCTTTTCGGCTCTA     |
| PAX6           | AACGATAACATACCAAGCGTGT    | GGTCTGCCCCGTTCAACATC       |
| FOXP1          | GAGCGACGACGTGTTTCATC      | GCCGTTGTAACCTCAAAGTGCTG    |
| TUJ1           | CCCGTTATCCCAGCTCCAATATGCT | ATGGCTTGACGTGCGTACTTCTCC   |
| MAP2           | AAACTGCTCTTCCGCTCAGACACC  | GTTCACTGGGCAGGTCTCCACAA    |
| DCX            | CTCTGGATGAAAATGAATGCCGA   | AGGGCTCTTGGCTGAAGTCT       |
| NKX2.1-1       | AGCACACGACTCCGTTCTC       | GCCCACTTTCTTGTAGCTTTCC     |
| $\beta$ -actin | TTTGAATGATGAGCCTTCGTGCCC  | GGTCTCAAGTCAGGTACAGGTAAGC  |
| ECPAM          | CCATGTGCTGGTGTGTGAAC      | CCTTCTGAAGTGCAGTCCGC       |
| Total-ERVH48-1 | GCACTACAGAGGGGAGATGC      | CCCCATTACGACTGCCACAT       |
| Endo-ERVH48-1  | CAGGTGCTTGAGGACATA        | ATTGGACACATTCATGGTAAG      |
| PCR primer     |                           |                            |
| name           | Forward primer            | Reverse primer             |
| OCT4           | AGTGAGAGGCAACCTGGAGA      | AGGAACTGCTTCCTTCACGA       |
| KLF4           | CCCACACAGGTGAGAAACCT      | CCCCCTGAACCTGAAACATA       |
| SOX2           | ACCAGCTCGCAGACCTACAT      | CCCCCTGAACCTGAAACATA       |
| miRNA          | TTTCCAAAATGTCGTAATAACCCCG | TCCATGTTTTGGTGATGGTA       |
| PCEP4-ERVH48-1 | TTTCCAAAATGTCGTAATAACCCCG | TGATTCAACACATTCCTCGA       |
| OCT4 endo      | AGTTTGTGCCAGGGTTTTTG      | ACTTCACCTTCCTCCAACC        |
| GAPDH          | ACCACAGTCCATGCCATCA       | TGAGCTTGACAAAGTGGTCCG      |

Video S1 The beating of cardiomyocytes was induced by H1.

Video S2 The beating of cardiomyocytes was induced by UiPSCc-L.

Video S3 The beating of cardiomyocytes was induced by UiPSCs-LE.

Video S4 The beating of cardiomyocytes was induced by UiPSCs-P.

Video S5 The beating of cardiomyocytes was induced by UiPSCs-PE.