**SUPPLEMENTARY MATERIAL**

**Table S1.** RCPCMi013-A (IPSAVE2S) iPS cell line passport.

| No. | Characteristic | Data |
|---|---|---|
| 1 | Unique Identifier | RCPCMi013-A |
| 2 | Alternative Name | IPSAVE2S |
| 3 | Institution | Lopukhin Federal Research and Clinical Center of Physical-Chemical Medicine, Moscow, Russia |
| 4 | Ethics Committee Approval | Study approved by the Ethics Committee of the Lopukhin Federal Research and Clinical Center of Physical-Chemical Medicine; protocol No. 1 dated 1 June 2021 |
| 5 | Cell Type | iPSCs |
| 6 | Organism Species | Human |
| 7 | Donor Information | Age: 46<br>Sex: Male<br>Ethnicity: Caucasian |
| 8 | Original Cell Type | Skin fibroblasts |
| 9 | Biomaterial Collection Date | 2022 |
| 10 | Reprogramming Method | Sendai virus-based (non-integrative) |
| 11 | Reprogramming Factors | OCT3/4, SOX2, KLF4, C-MYC |
| 12 | Clonality | Clonal, clone 2S |
| 13 | Disease Status | None |
| 14 | Morphology | Colonies exhibiting typical human pluripotent stem cell morphology |
| 15 | Pluripotency Confirmation | Verified by embryoid body formation assays, spontaneous differentiation into derivatives of all three germ layers, and specific marker expression analysis |
| 16 | Karyotype | 46, XY |
| 17 | Contamination Testing | Mycoplasma not detected |
| 18 | Application Area | Cell biology research |

| | | |
|---|---|---|
| 19 | Culture Method | On Matrigel substrate (Matrigel hES-qualified matrix, Corning) |
| 20 | Culture Medium | GibriS-8 (PanEco) + mTeSR1 (Stemcell Technologies) mixed at 4:1 ratio, supplemented with 50 U/mL and 50 μg/mL penicillin-streptomycin |
| 21 | Temperature, °C | 37 |
| 22 | $CO_2$ Concentration, % | 5 |
| 23 | Passaging Method | Enzymatic, 0.05% Trypsin-EDTA (Gibco or PanEco) |
| 24 | Passaging Ratio | 1:4 - 1:5 |
| 25 | Cryopreservation | 90% FBS (Himedia), 10% DMSO (PanEco), 5 μM ROCK inhibitor Y-27632 (Stemcell Technologies) |
| 26 | Storage Conditions | Liquid nitrogen |
| 27 | Registry Account | HPSReg ID: RCPCMi013-A |
| 28 | Date of Depositing | 05.02.2025 |

**Table S2.** Data on cell count, troponins concentration, normalized troponins content and the resulting cTnI/ssTnI ratio in the analyzed iCMs samples.

| **No** | **Sample** | **$10^6$ cells** | **Lysate volume, μL** | **Protein concentration, ng/mL** | | | **Protein content in lysate, ng** | | | **Normalized protein content, ng/$10^6$ cells** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **ssTnI** | **cTnI** | **cTnT** | **ssTnI** | **cTnI** | **cTnT** | **ssTnI** | **cTnI** | **cTnT** | **cTnI/ ssTnI** |
| Short-term maturation | | | | | | | | | | | | | |
| 1 | Control #1 [1] | 1.249 | 200 | 210.2 | 6.6 | 3378.5 | 42.0 | 1.31 | 675.7 | 33.66 | 1.05 | 541.98 | 0.031 |
| 2 | Control #2 | 1.734 | 200 | 177.5 | 7.5 | 3274.4 | 35.5 | 1.51 | 654.9 | 20.47 | 0.87 | 377.67 | 0.043 |
| 3 | Medium 1 #1 | 1.500 | 200 | 225.3 | 10.6 | 3294.3 | 45.1 | 2.12 | 658.9 | 30.04 | 1.41 | 439.24 | 0.047 |
| 4 | Medium 1 #2 | 1.275 | 200 | 250.1 | 12.8 | 4093.1 | 50.0 | 2.56 | 818.6 | 39.24 | 2.01 | 642.05 | 0.051 |
| 5 | Medium 2 #1 | 1.125 | 200 | 277.9 | 16.4 | 4100.7 | 55.6 | 3.28 | 820.1 | 49.40 | 2.91 | 729.01 | 0.059 |
| 6 | Medium 2 #2 | 1.125 | 200 | 281.8 | 16.2 | 4973.3 | 56.4 | 3.25 | 994.7 | 50.09 | 2.89 | 884.14 | 0.058 |
| Long-term maturation | | | | | | | | | | | | | |
| 1 | Control #1 | 0.430 | 100 | 176.21 | 10.14 | 3329.58 | 17.62 | 1.014 | 332.96 | 40.98 | 2.36 | 774.32 | 0.058 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | Control #2 | 0.420 | 100 | 116.06 | 9.07 | 3170.41 | 11.61 | 0.907 | 317.04 | 27.63 | 2.16 | 754.86 | 0.078 |
| 3 | Medium 3 #1 | 0.100 | 100 | 0.41 | 0.12 | 5.97 | 0.04 | 0.012 | 0.60 | 0.41 | 0.12 | 5.97 | 0.306 |
| 4 | Medium 3 #2 | 0.100 | 100 | 1.12 | 0.11 | 12.93 | 0.11 | 0.011 | 1.29 | 1.12 | 0.11 | 12.93 | 0.100 |
| 5 | Medium 4 #1 | 0.070 | 100 | 18.15 | 0.35 | 90.83 | 1.82 | 0.035 | 9.08 | 25.93 | 0.50 | 129.75 | 0.019 |
| 6 | Medium 4 #2 | 0.025 | 100 | 8.67 | 0.42 | 29.27 | 0.87 | 0.042 | 2.93 | 34.70 | 1.69 | 117.09 | 0.049 |

[1] #1, #2 – technical replicates.

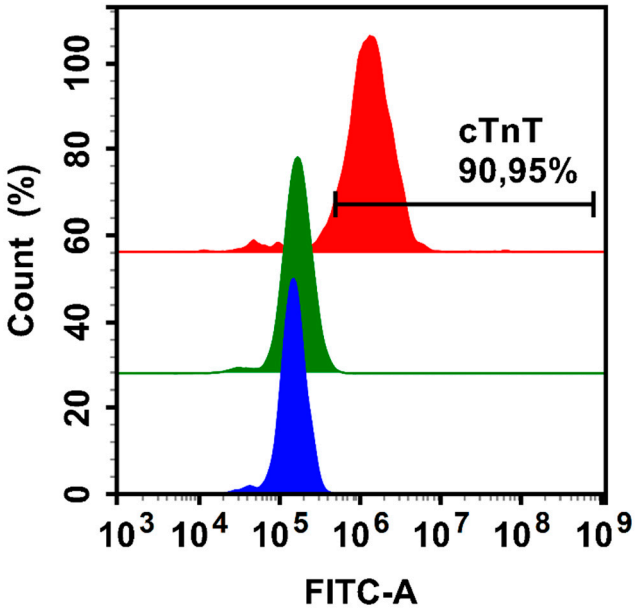


**Figure S1.** Flow cytometry data on fluorescence intensity of unstained (green), secondary antibody only stained (blue) and cTnT-stained (red) AVE2S-iCMs (passage 1, day 23). The histogram demonstrates the absence of secondary antibody nonspecific binding in human iCMs.