Efficient differentiation of human ES and iPS cells into cardiomyocytes on biomaterials under xeno-free conditions

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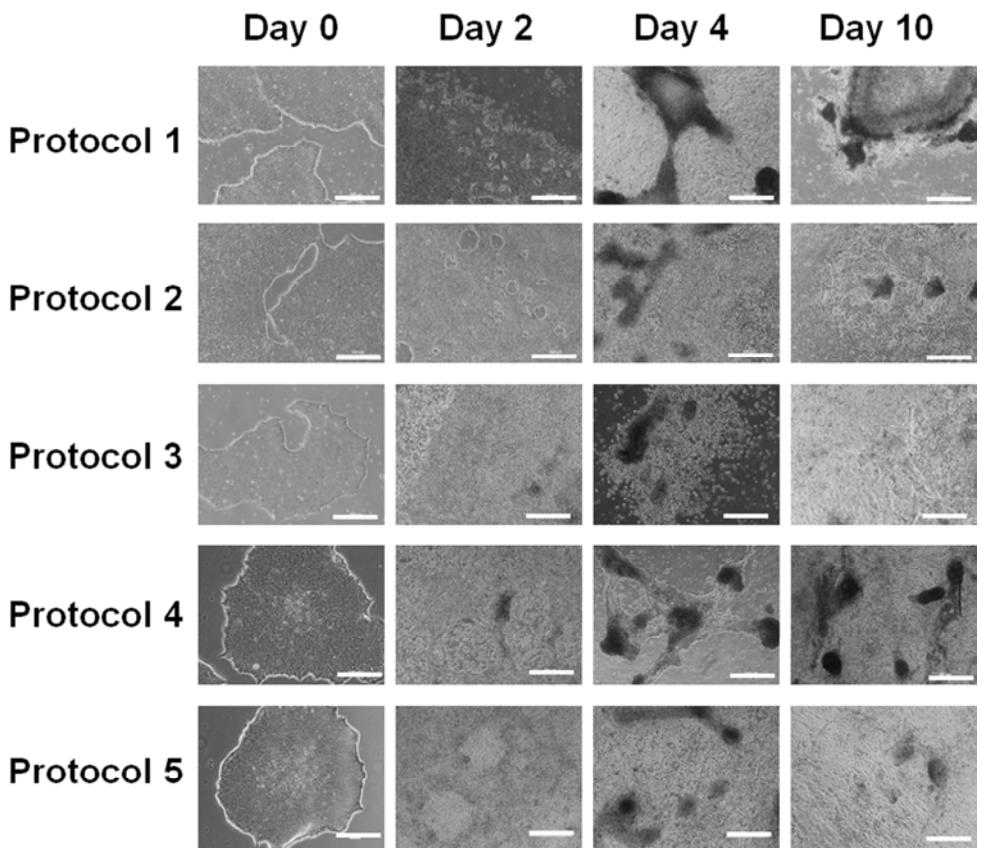
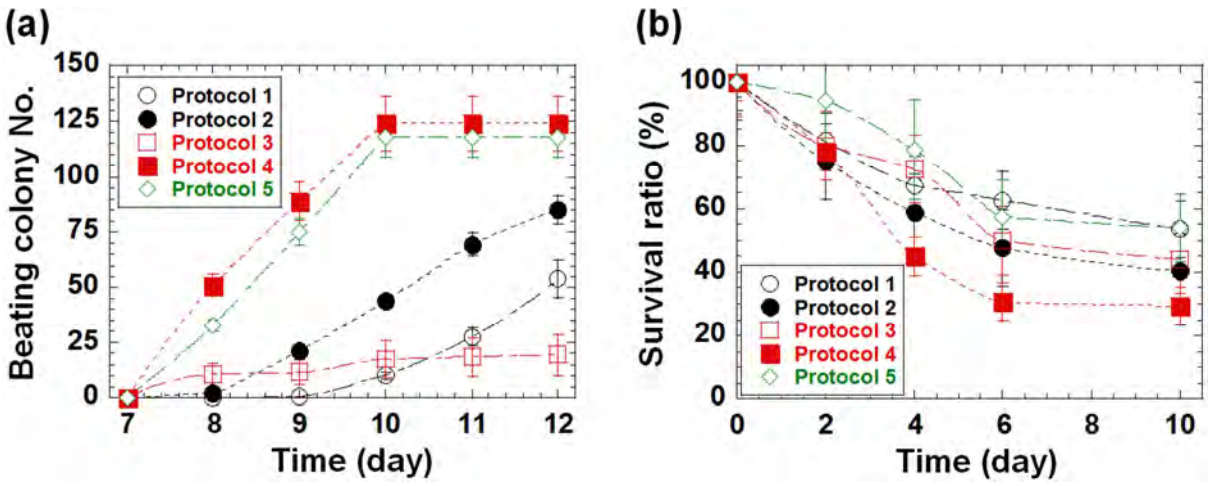
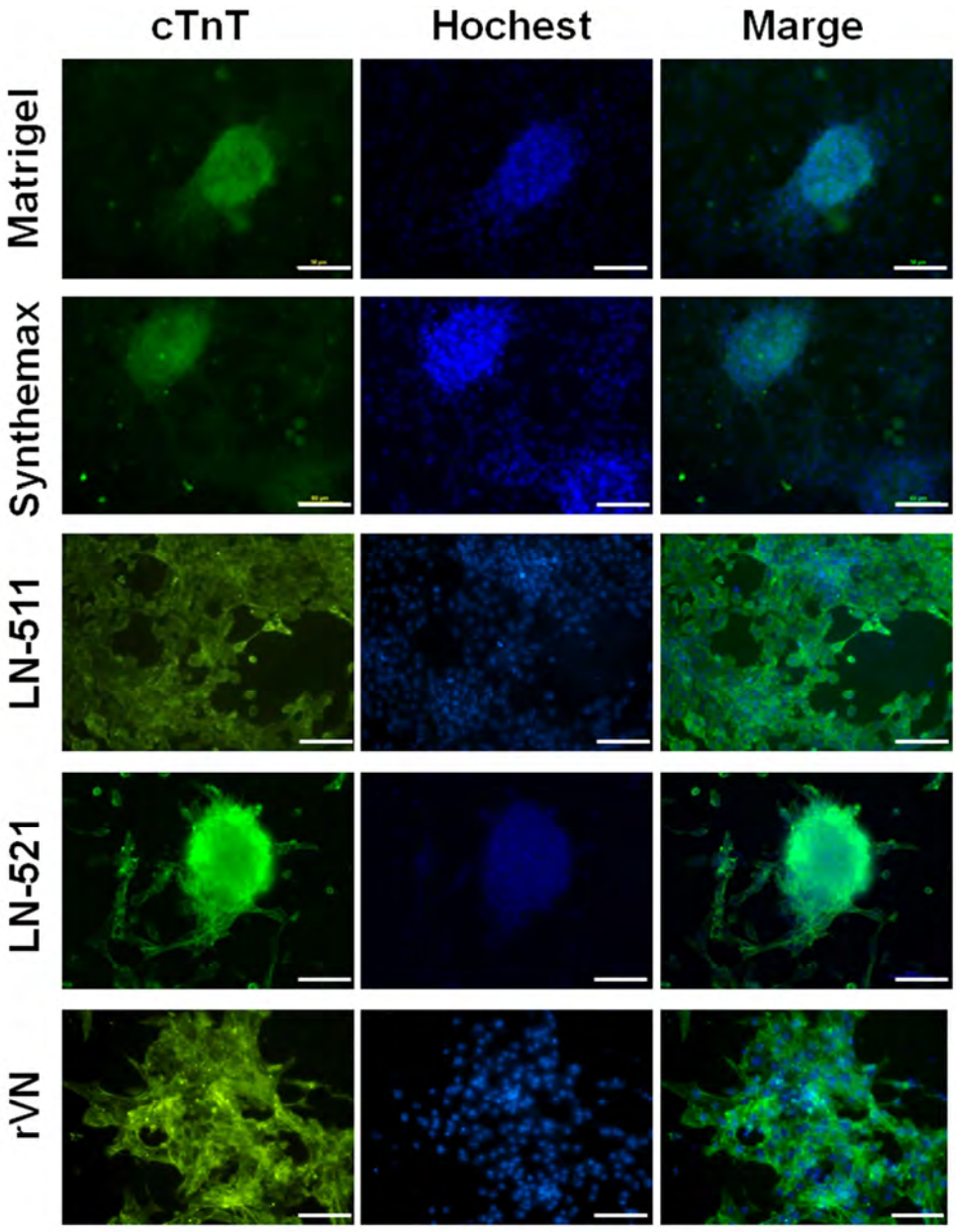
Supplementary Information



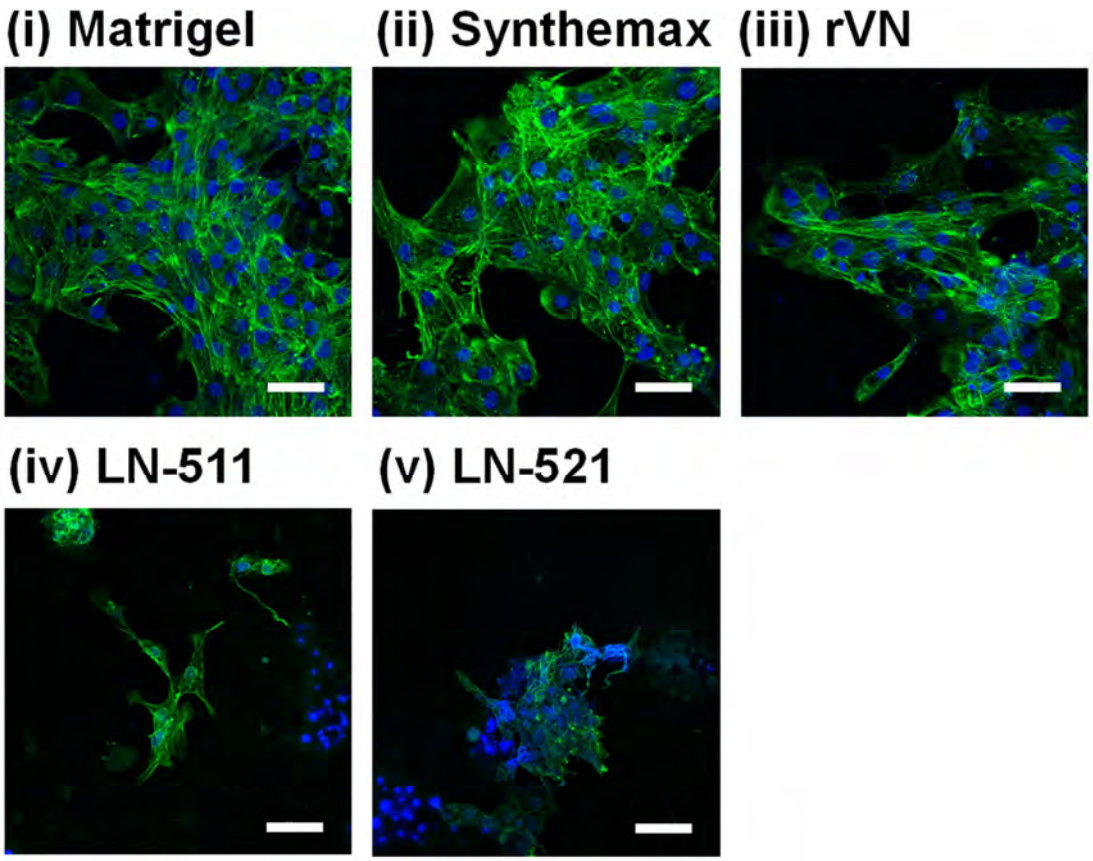
Supplementary Fig. 1 The sequential morphological changes during hESC (H9) differentiation on Matrigel-coated dishes towards the cardiac lineage. Morphologies of hESCs differentiated using Protocols 1, 2, 3, 4, and 5 on days 0, 2, 4, and 10 after induction of the cells into cardiomyocytes. Scale bar indicates 500 μm.



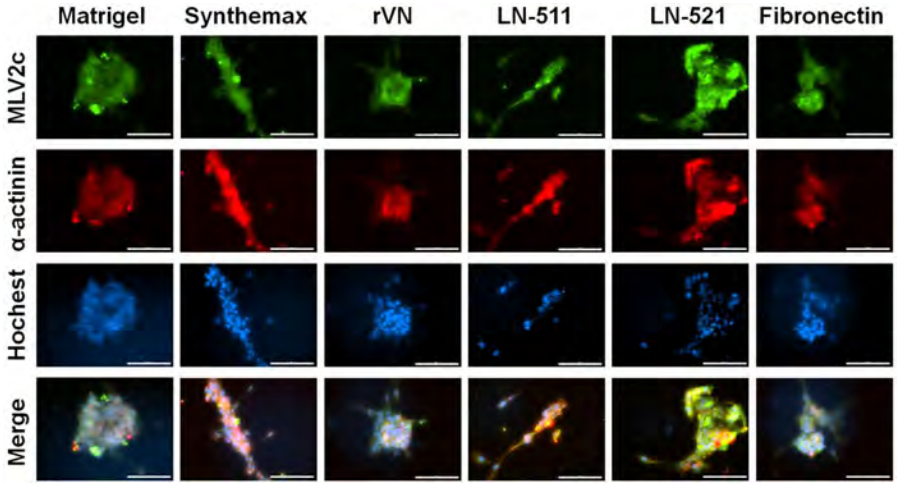
Supplementary Fig. 2 Characterization of hESC-derived cardiomyocytes. (a) Time dependent of survival ratio of the hESCs (H9) induced by differentiation into cardiomyocytes on Matrigel-coated dishes using Protocols 1, 2, 3, 4, and 5. (b) Time dependent beating colony numbers of the cells per well on 6 cm dishes, which were induced by differentiation into cardiomyocytes on Matrigel-coated dishes using Protocols 1, 2, 3, 4, and 5.



Supplementary Fig. 3 Immunostaining analysis of hESC-derived cardiomyocytes differentiated on several ECM-coated dishes using Protocol 2. Expression of cTnT on hESC-derived cardiomyocytes, which were differentiated on Matrigel-coated, Synthemax-coated, LN-511-coated, LN-521-coated, and rVN-coated dishes on day 14. Nuclei were stained with Hoechst 33342. Scale bar indicates 50 μm.



Supplementary Fig. 4 Characterization of hESC-derived cardiomyocytes differentiated on several ECM-coated dishes using Protocol 2. The α-actinin expression levels as analyzed by confocal laser microscopy on hESC-derived cardiomyocytes differentiated on the Matrigel-coated, Synthemax-coated, rVN-coated, LN-511-coated and LN-521-coated dishes on day 14. Nuclei were stained with Hoechst 33342. Scale bar indicates 50 μm.



Supplementary Fig. 5 Immunostaining analysis of hESC-derived cardiomyocytes differentiated in several types of ECM-coated dishes using Protocol 4. Expression of α-actinin and MLV2c on hESC-derived cardiomyocytes analyzed by an immunostaining method in cells differentiated in Matrigel-coated, Synthemax-coated, rVN-coated, LN-511-coated, LN-521-coated, and FN-coated dishes on day 14. Nuclei were stained with Hoechst 33342. The scale bar indicates 100 μm.