

Description of Additional Supplementary Files

Supplementary Data 1.

List of genes expressed in hPSC-CFs and haV-CFs and their corresponding expression values measured by RNA-seq (TPM) with log fold-change hPSC-CF/haV-CF > 3

Supplementary Data 2.

List of genes expressed in haV-CFs and hPSC-CFs and their corresponding expression values measured by RNA-seq (TPM) with log fold-change haV-CF/hPSC-CF > 3

Supplementary Movie 1.

Confocal Z-scan series of immunolabeled extracellular collagen (green) and fibronectin (red) produced in high density hPSC-CF culture. Nuclei are labeled with Hoechst (blue).

Supplementary Movie 2.

Confocal Z-scan series of immunolabeled extracellular collagen (green) and fibronectin (red) produced in high density hfV-CF culture. Nuclei are labeled with Hoechst (blue).

Supplementary Movie 3.

Confocal Z-scan series of immunolabeled extracellular collagen (green) and fibronectin (red) produced in high density haV-CF culture. Nuclei are labeled with Hoechst (blue).

Supplementary Movie 4.

Confocal Z-scan series of immunolabeled extracellular collagen (green) and fibronectin (red) produced in high density hDF culture. Nuclei are labeled with Hoechst (blue).

Supplementary Movie 5.

Confocal Z-scan series of immunolabeled fibronectin (red) and α -smooth muscle actin (green) in permeabilized high density hPSC-CF cultures. Nuclei are labeled with Hoechst (blue).

Supplementary Movie 6.

Optical mapping membrane of voltage of the monolayers from 100%hPSC-CMs.

Supplementary Movie 7a.

Optical mapping membrane of voltage of the monolayers from co-culture of 90%hPSC-CMs and 10% hPSC-CFs.

Supplementary Movie 7b.

Optical mapping membrane of voltage of the monolayers from co-culture of 90%hPSC-CMs and 10% haV-CFs.

Supplementary Movie 7c.

Optical mapping of membrane voltage from monolayers with co-culture of 90%hPSC-CMs and 10%hDFs.

Supplementary Movie 8a.

Optical mapping of membrane voltage from monolayers with co-culture of 50%hPSC-CMs and 50%hPSC-CFs.

Supplementary Movie 8b.

Optical mapping of membrane voltage from monolayers with co-culture of 50%hPSC-CMs and 50%haV-CFs

Supplementary Movie 8c.

Optical mapping of membrane voltage from monolayers with co-culture of 50%hPSC-CMs and 50%hDFs.