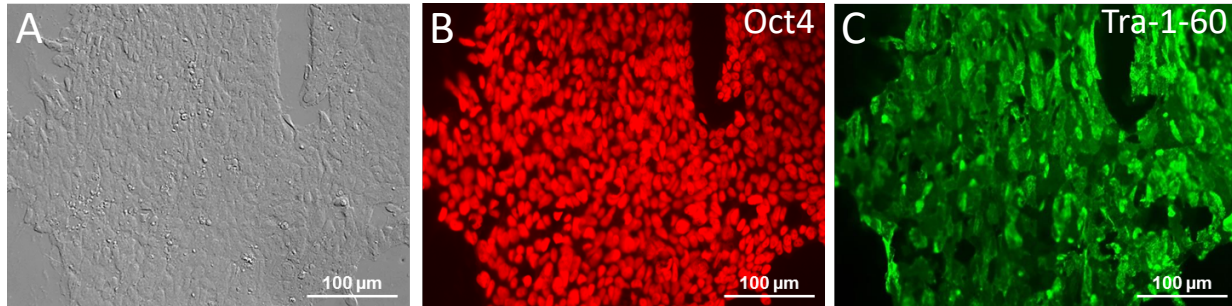


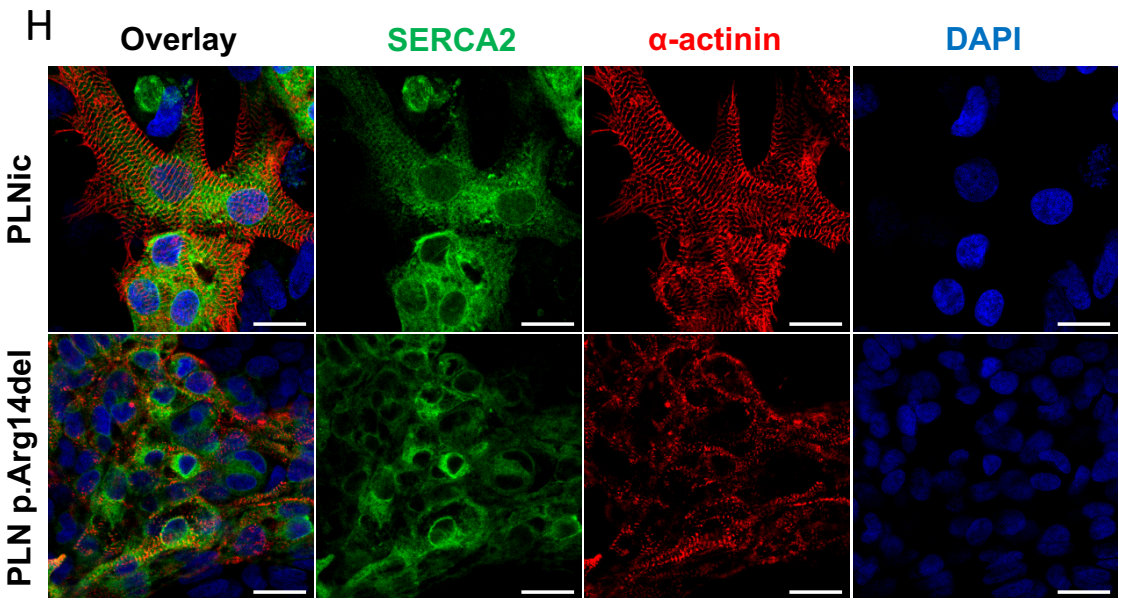
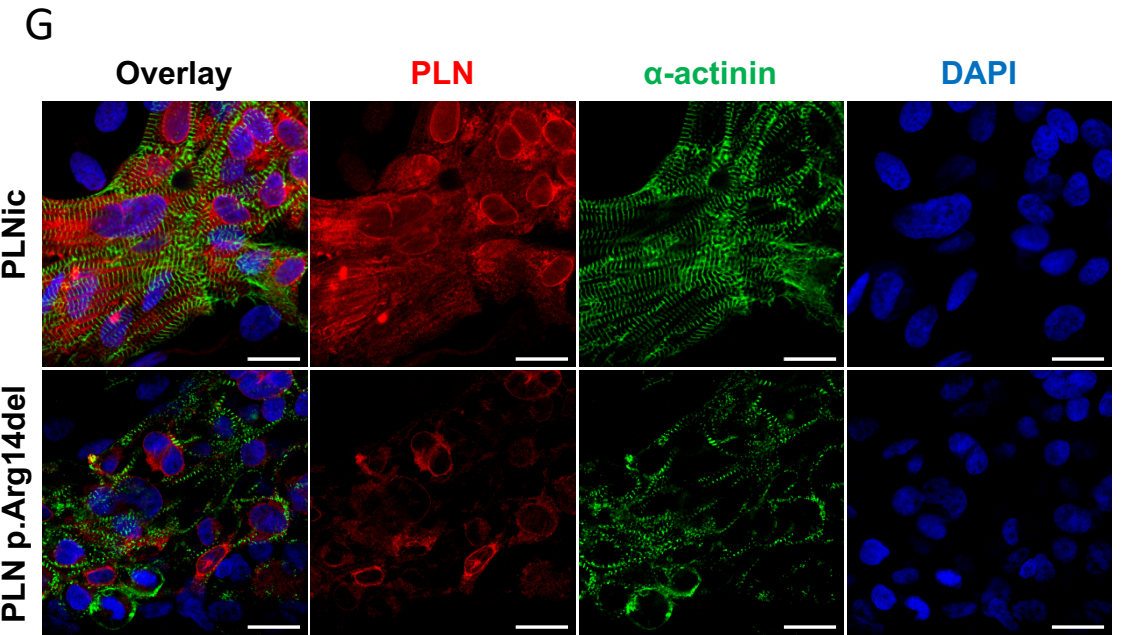
# Appendix Figure S1-9

# Appendix Figure S1



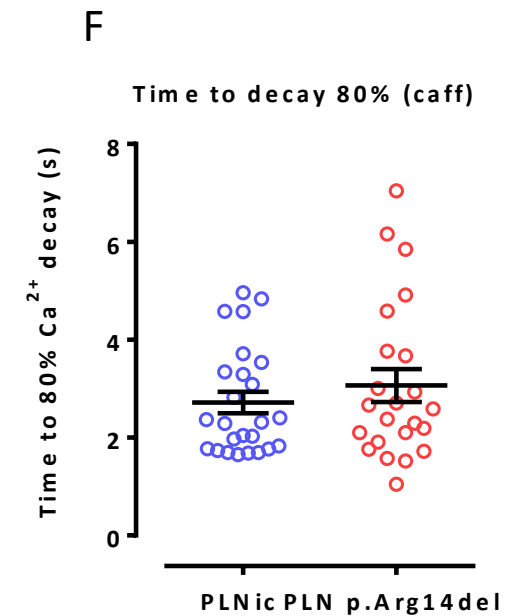
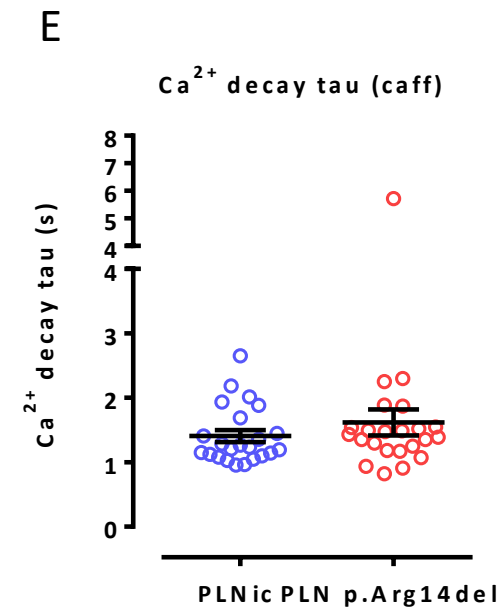
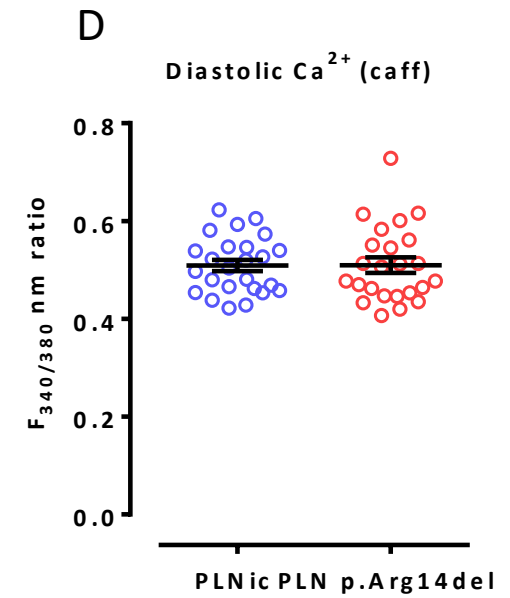
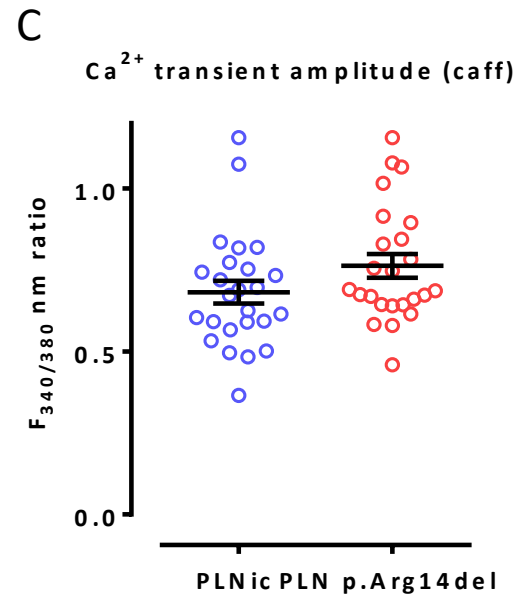
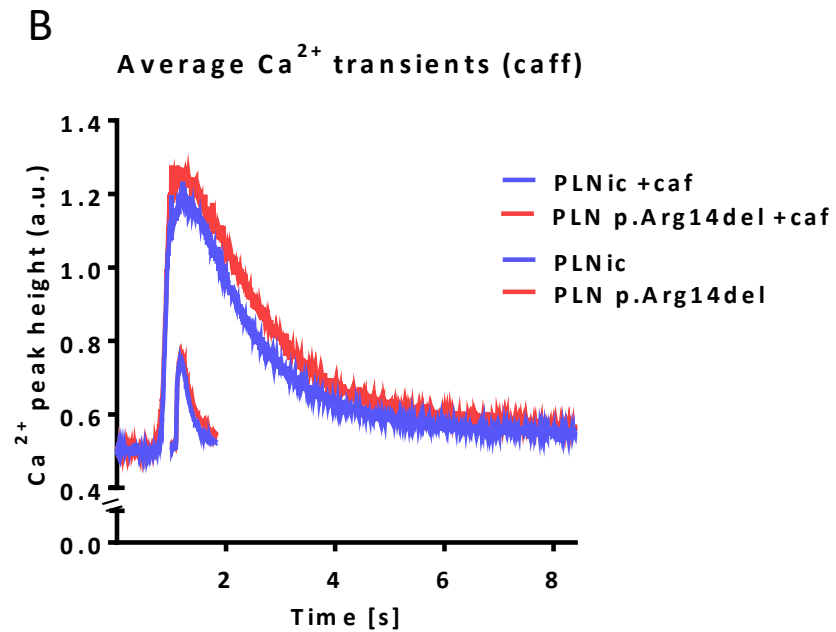
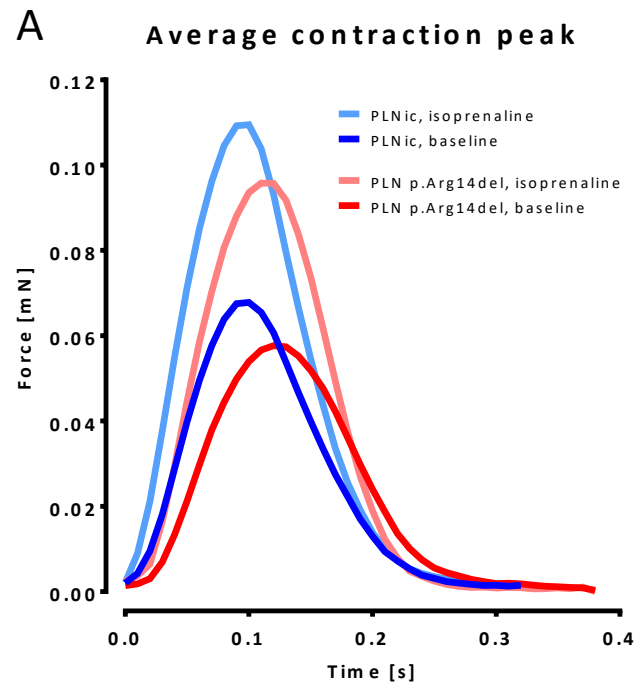
**F**

Name	Sequence forward (5'-3')	Sequence reverse (5'-3')	PCR product size
OT1	AGCAGGCAGCCCTATTT TCAT	AGAGAGGAGCAAGACA GACTCA	555 bp
OT2	GACATGGCTGATTATAT TCTTGCTG	GATCCAGGCTGGCTAAG GTAG	508 bp
OT3	GGGAGCCCACTGATGT GAAG	ACAATCTCAACGTGGAA TAGGGA	530 bp
OT4	GGGTGGGCTGAGCCAA TAAT	TGAGTATACATTGCTTTG GAGTACA	657 bp
OT5	AGGCACTCGCAAGCTTC TTT	CAGCAGAAGTGTACTION AAAGACC	530 bp
OT6	CCTCATGTATCTGCAGG TGTGT	TGCCACAATGGCTAGTG TATGT	720 bp
OT7	TGTCTCACTCAACATAC GTGGT	CTGAGGAAGCAGGAGA GGAGTA	815 bp
OT8	TTGTTCTGCCAGGACCC TAAG	TGAGCACCACAAAATGG GACT	501 bp
OT9	AGGGTGGGTGACTGAG TGTT	ACTTGTGATGGGAGTCG CTTT	587 bp
OT10	AAGTCTGTGACAGGTTT AGGG	ATTGGCAAAAGCAACTG CGAG	502 bp



**Appendix Figure S1.** Characterization of hiPSC and hiPSC-CM. **A:** Bright field microscopy and immunofluorescence for pluripotency markers: **B:** Oct4 (red) and **C:** Tra-1-60 (green). G-banding chromosome analysis for **D:** PLN p.Arg14del hiPSC and **E:** isogenic control hiPSC demonstrating normal karyotype (46, XX). **F:** PCR primer sequences and estimated product size for off target (OT) sequencing. **G, H:** Immunofluorescence of 2D hiPSC-CM from PLNic and PLN p.Arg14del with antibodies against PLN (red),  $\alpha$ -actinin (green and red), SERCA2 (green); DAPI staining for nuclei (blue); scale bar 20  $\mu$ m.

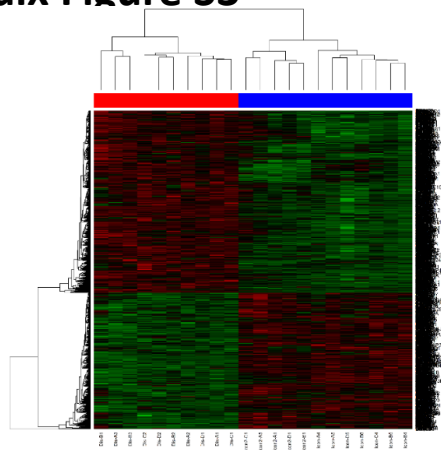
# Appendix Figure S2



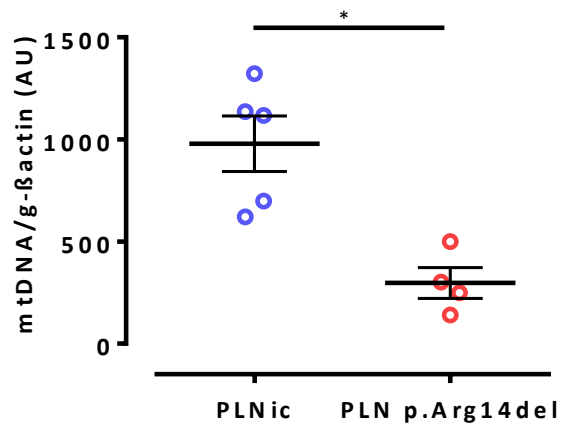
**Appendix Figure S2. A:** Average force contraction peak for PLNic and PLN p.Arg14del at baseline (EC50 [Ca<sup>2+</sup>]) and in response to isoprenaline (ISO; 100 nM), data are related to Figure 2E, F. Ca<sup>2+</sup> transient analysis in FURA 2-loaded 2D hiPSC-CM after caffeine puff (20 mM). **B:** Average Ca<sup>2+</sup> transient peak, **C:** Ca<sup>2+</sup> transient amplitude, **D:** Diastolic Ca<sup>2+</sup>, **E:** Time to decay 80% and **F:** Ca<sup>2+</sup> decay tau; PLNic: n=25 hiPSC-CM from 2 batches and PLN p.Arg14del: n=24 hiPSC-CM from 2 batches, mean ± SEM, Mann–Whitney U test, \*p<0.05. The data are representative of n= 2 independent experiments.

# Appendix Figure S3

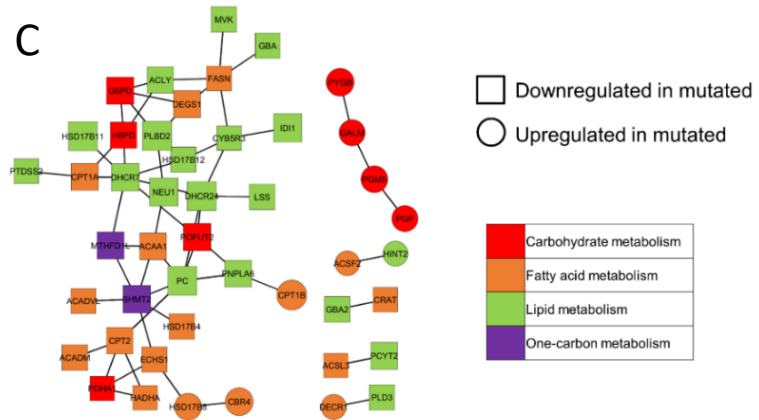
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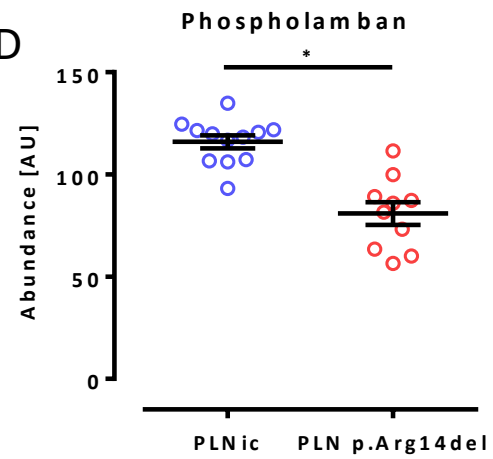
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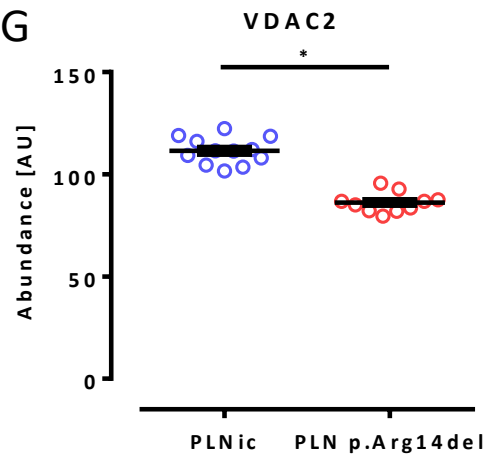
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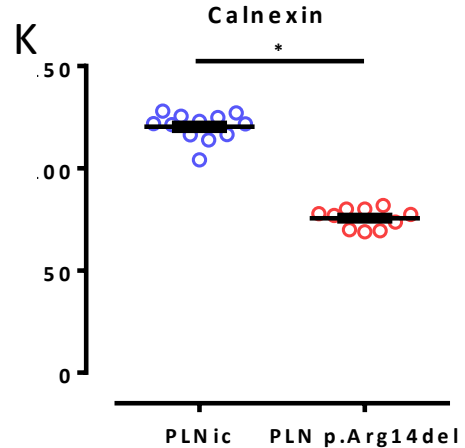
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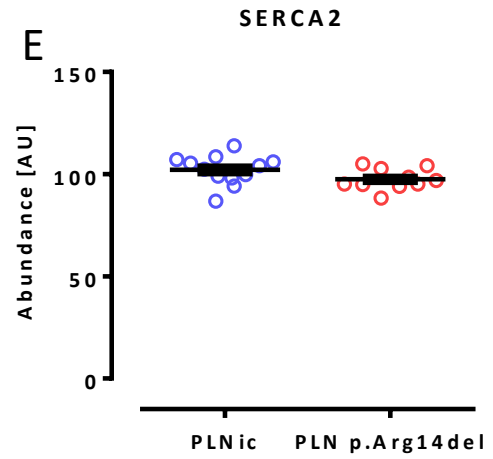
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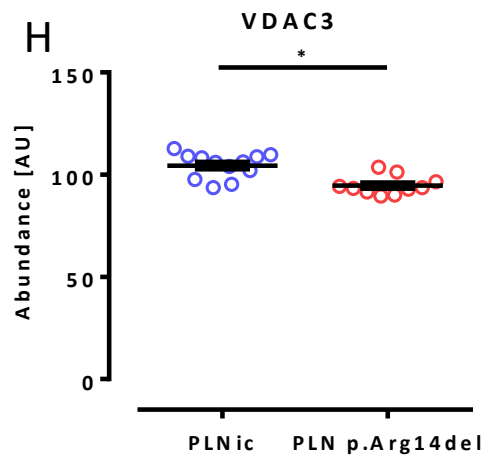
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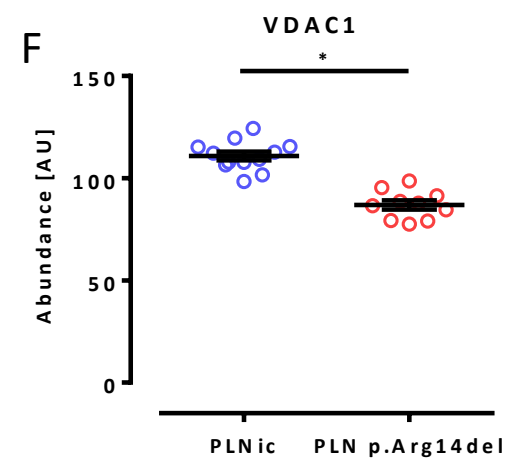
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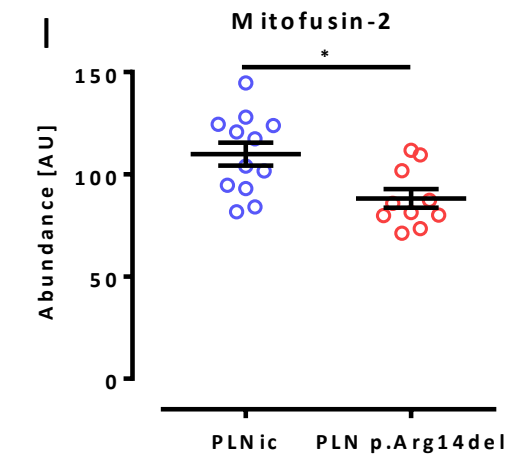
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F

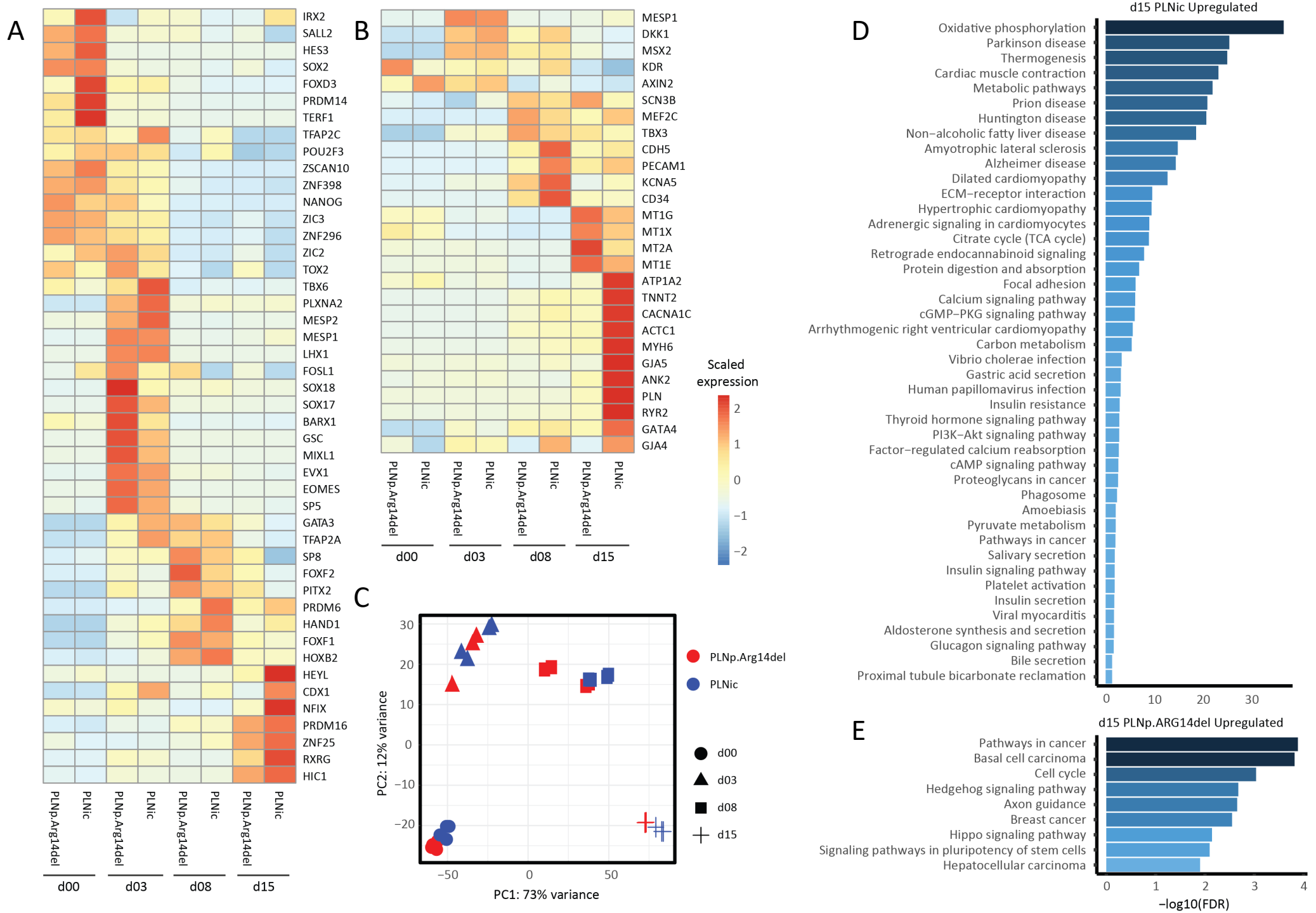


I



**Appendix Figure S3. A:** Heat map representation of differentially abundant proteins after unsupervised hierarchical clustering (ANOVA, FDR<0.05). **B:** PCR amplification of genomic DNA for the mitochondrial encoded NADH dehydrogenase (Mt-ND1/2), normalized to the nuclear-encoded gene actin; PLNic: n=5 EHTs, PLN p.Arg14del n=4 EHTs, mean±SEM, Mann–Whitney U test, \*p< 0.05. **C:** Co-expression network of differentially abundant proteins, which are related to metabolism (according to Uniprot characterization). **D-K:** Protein abundance of selected candidate proteins in the proteome screen, data extracted from **Table EV1**, PLNic: n=12, PLN p.Arg14del n=10, mean ± SEM, false discovery rate, \* p<0.05.

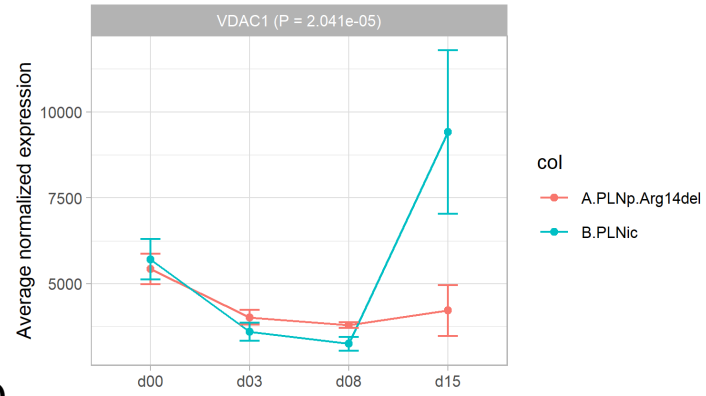
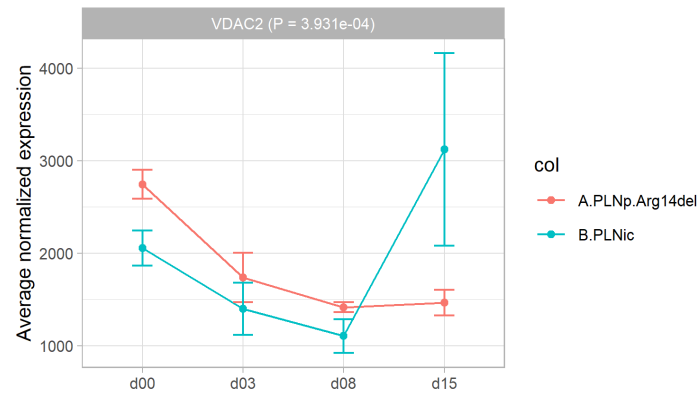
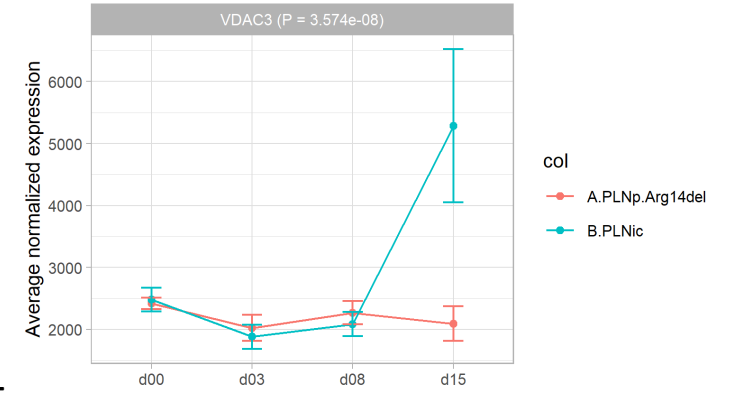
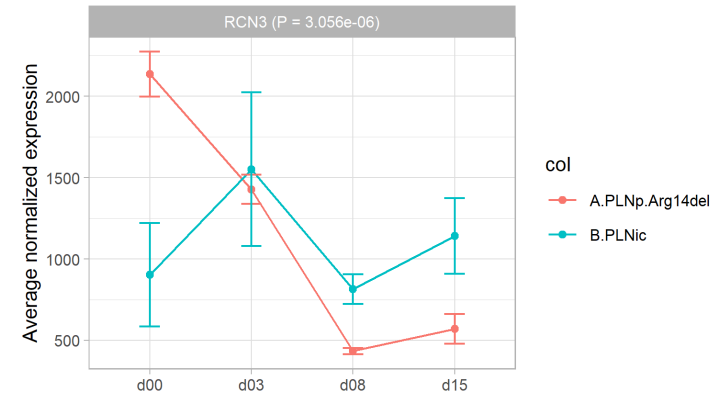
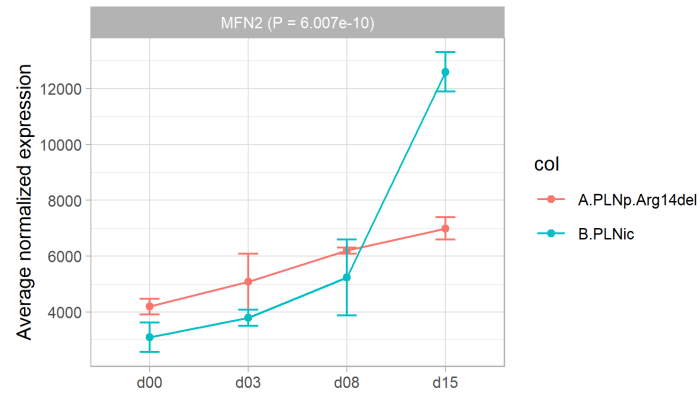
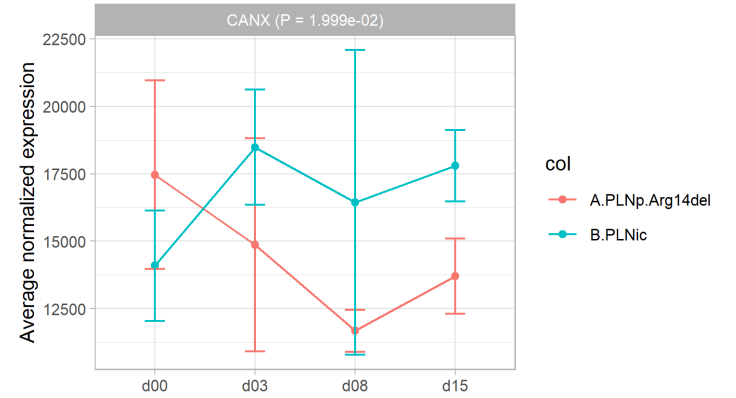
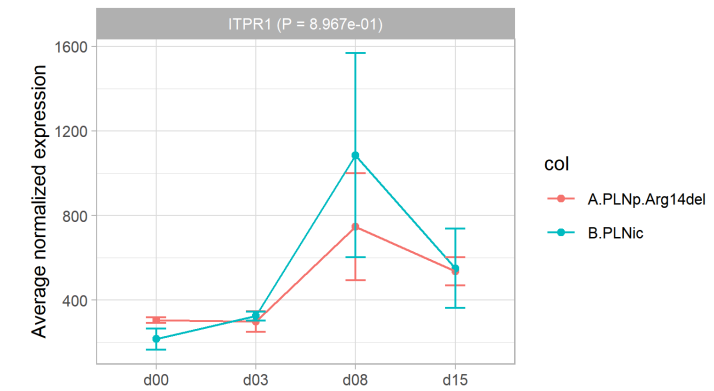
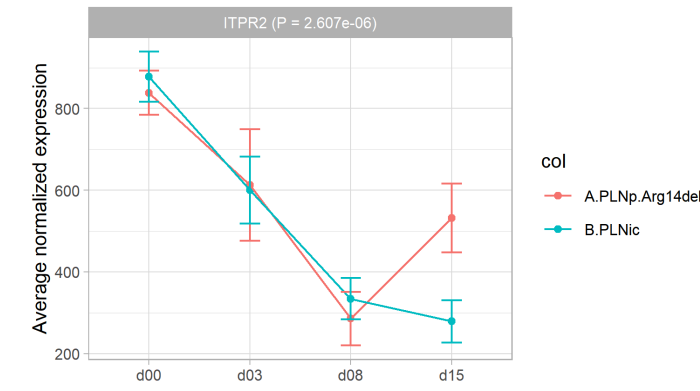
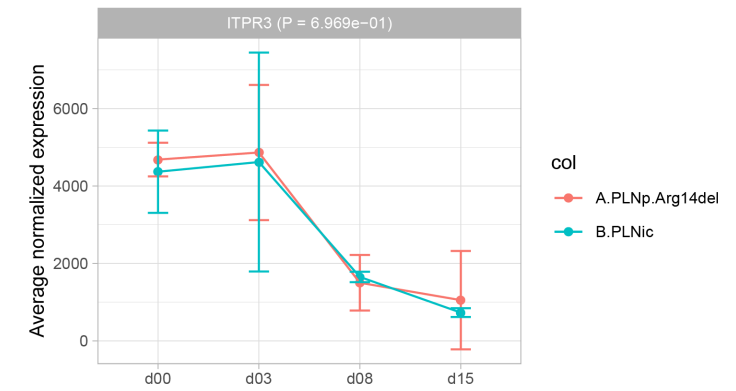
# Appendix Figure S4





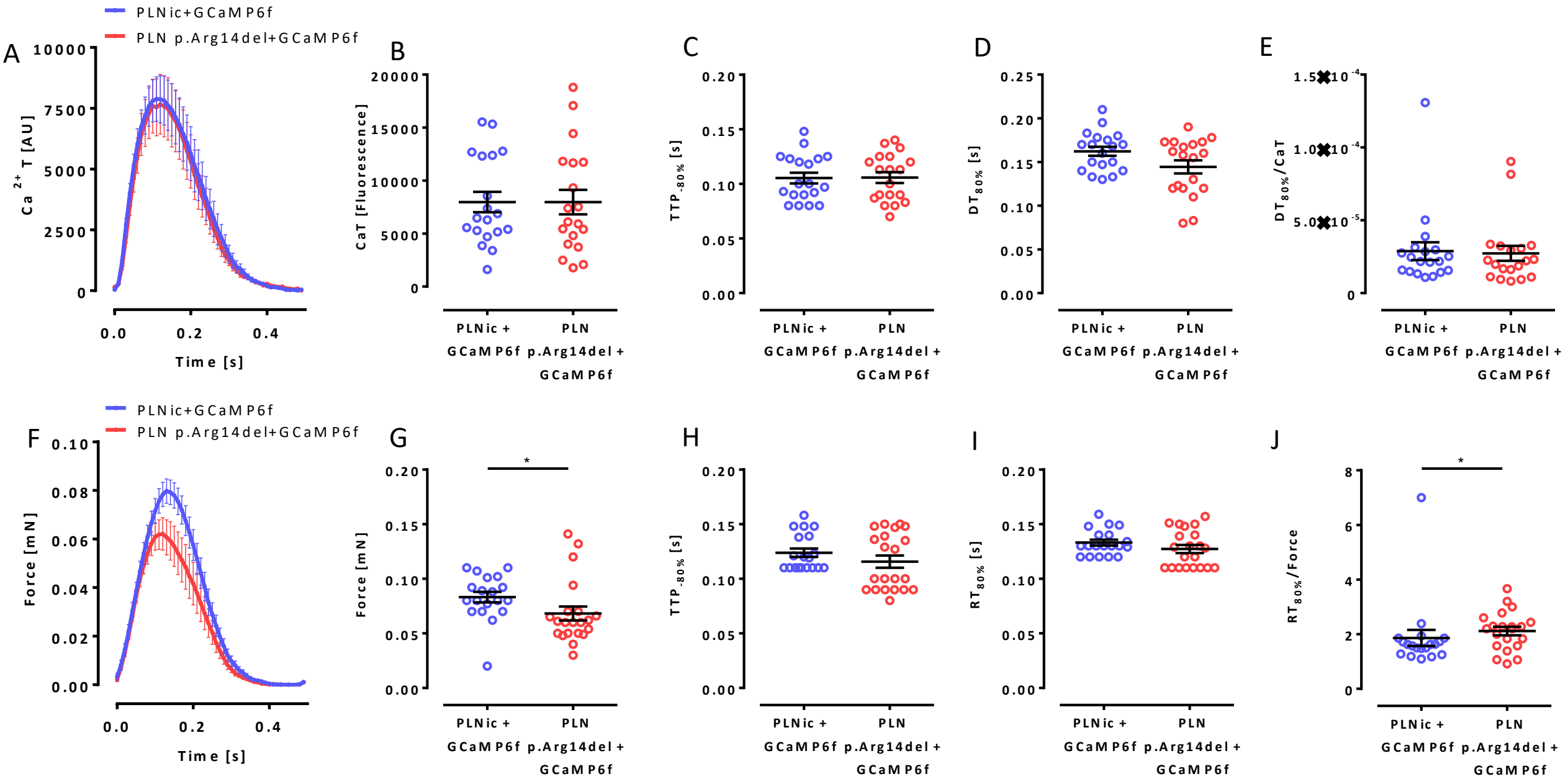
**Appendix Figure S4.** RNA sequencing analysis at different time points of cardiac differentiation of PLNic and PLN p.Arg14del hiPSC on day 0 (d00; hiPSC), day 3 (d03; mesodermal progenitors), day 8 (d08; cardiac progenitors) and day 15 (d15; early cardiomyocytes). **A, B** Heatmap of stage-specific markers of cardiac differentiation. The heatmap is scaled by row (gene) and the selected genes correctly define different stages of differentiation for both, PLNic and PLN p.Arg14del. **C:** Principal component analysis of PLNic and PLN p.Arg14del, n= 3-4 replicates, The data are representative of n= 2 independent differentiation rounds. **D, E:** Analysis of KEGG pathways of d15 samples that were significantly upregulated in PLNic (**D**) and PLN p.Arg14del (**E**).

# Appendix Figure S5

**A****B****C****D****E****F****G****H****I**

**Appendix Figure S5.** RNA sequencing analysis. **A-I:** Transcriptional expression profile of *VDAC1*, *VDAC2*, *VDAC3*, *MFN2*, *CANX*, *RCN3*, *ITPR1*, *ITPR2*, *ITPR3* at day 0, 3, 8, 15 of cardiac differentiation of PLNic and PLN p.Arg14del. 'P' indicates the adjusted p value of the difference in gene expression between PLNic and PLN p.Arg14del calculated by DESeq2 at day 15 of cardiac differentiation.

# Appendix Figure S6



**Appendix Figure S6.** Ca<sup>2+</sup> transient and force analysis of GCaMP6f-transduced EHTs. **A:** Average Ca<sup>2+</sup> transient peak, **B:** Fluorescence amplitude, **C:** Ca<sup>2+</sup> time to peak (TTP<sub>80%</sub>), **D:** Ca<sup>2+</sup> decay time (DT<sub>80%</sub>), **E:** DT<sub>80%</sub>/fluorescence amplitude ratio, **F:** Average force peak, **G:** force amplitude, **H:** force time to peak (TTP<sub>80%</sub>), **I:** force relaxation time (RT<sub>80%</sub>), **J:** RT<sub>80%</sub>/force amplitude ratio. Mean ± SEM, PLN<sup>Nic</sup>: n=19 EHTs; PLN p.Arg14del: n=21 EHTs. Mann–Whitney U test, \* p<0.05. The data are representative of 3 different batches.

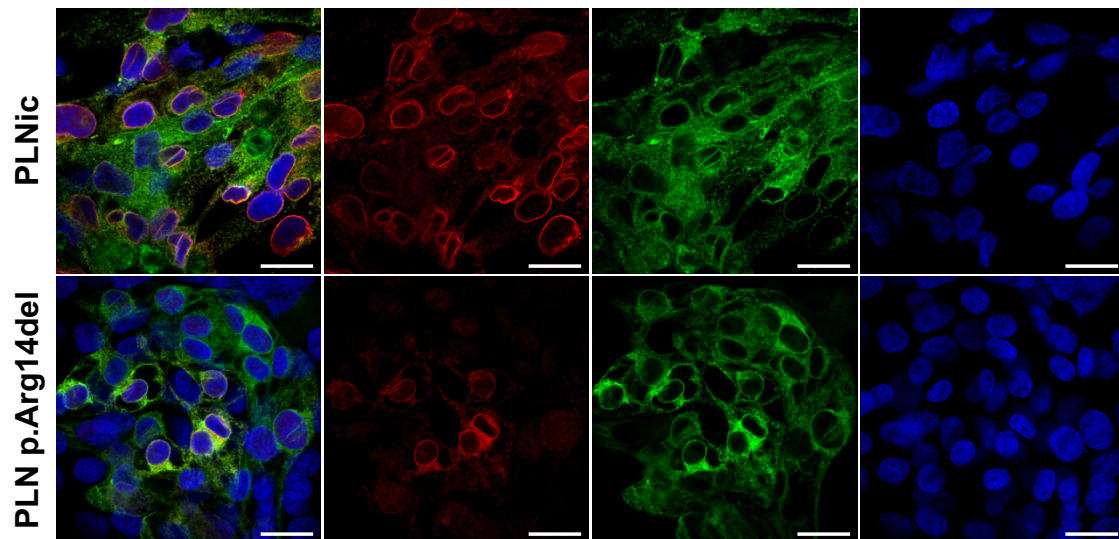
# Appendix Figure S7

A) Control virus  
Overlay

PLN

SERCA2

DAPI

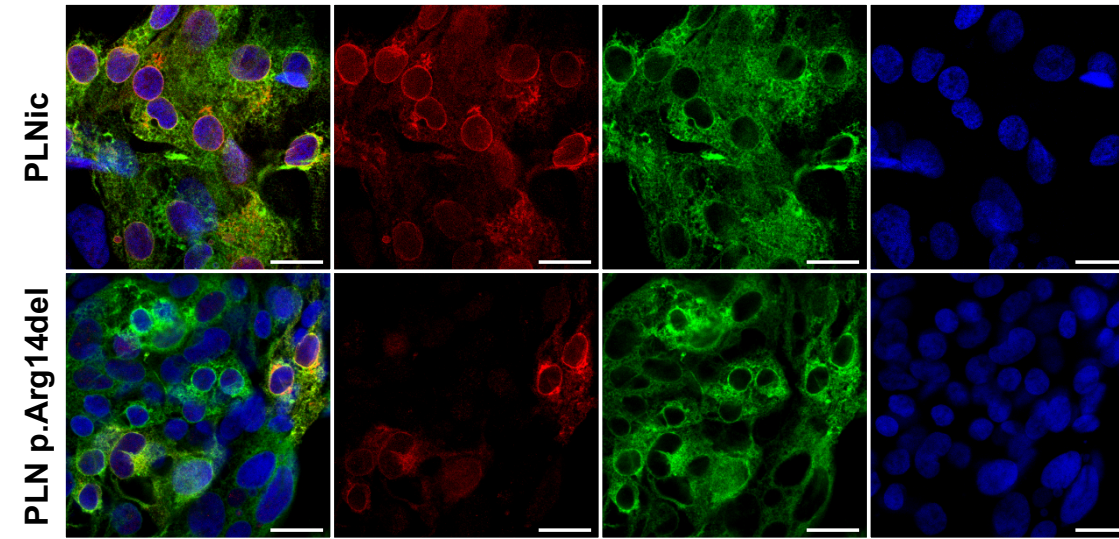


C) Parvalbumin  
Overlay

PLN

SERCA2

DAPI

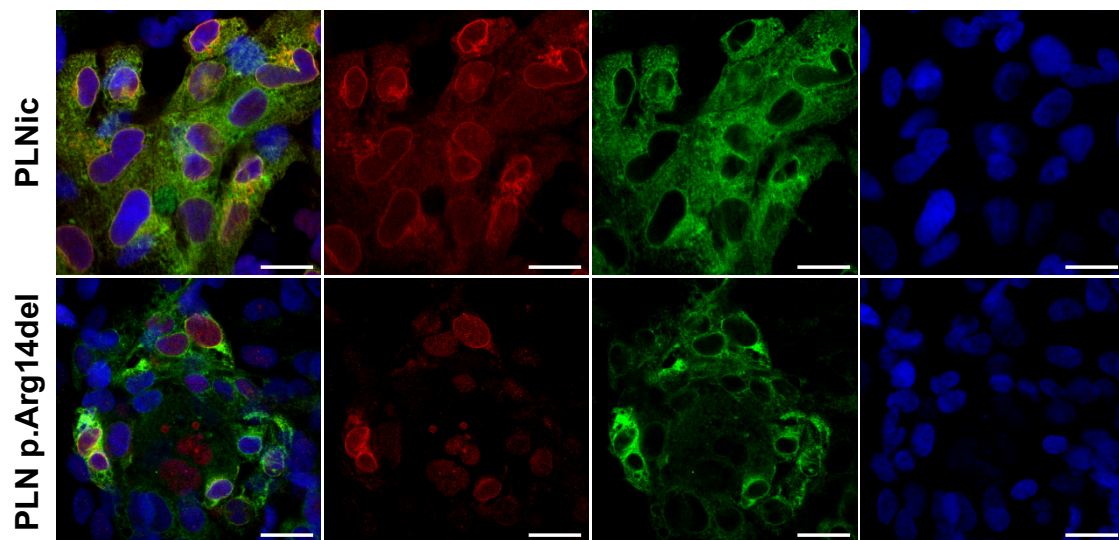


B) GCaMP6f  
Overlay

PLN

SERCA2

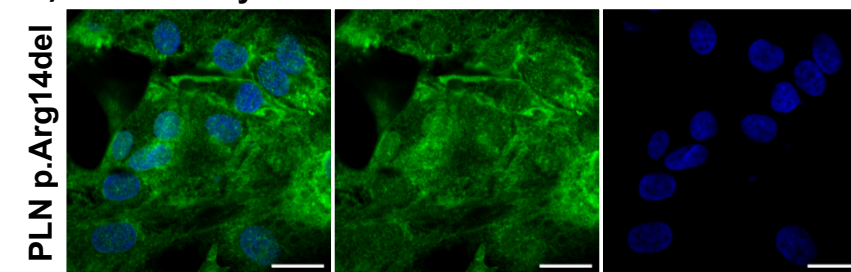
DAPI



D) Overlay

GFP

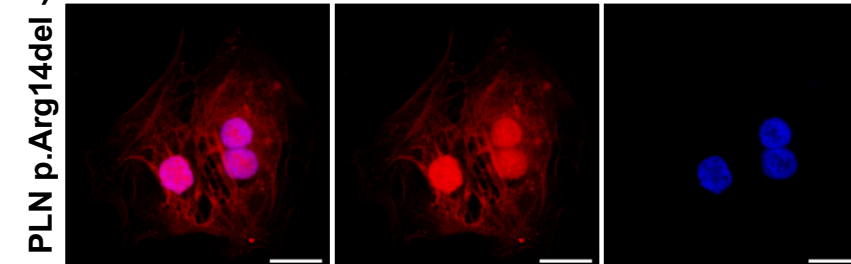
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E) Overlay

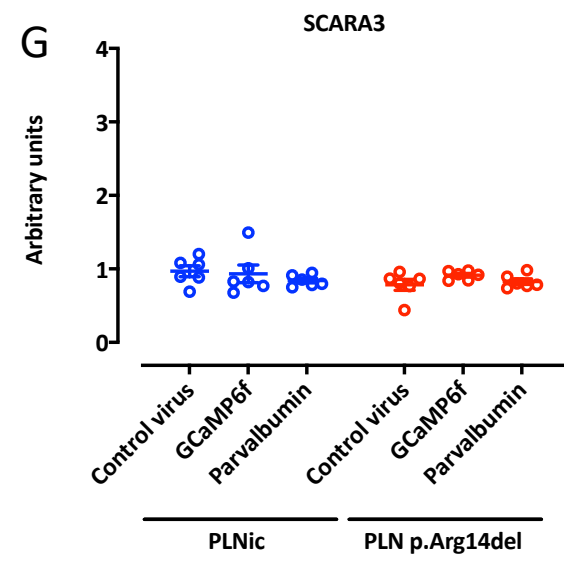
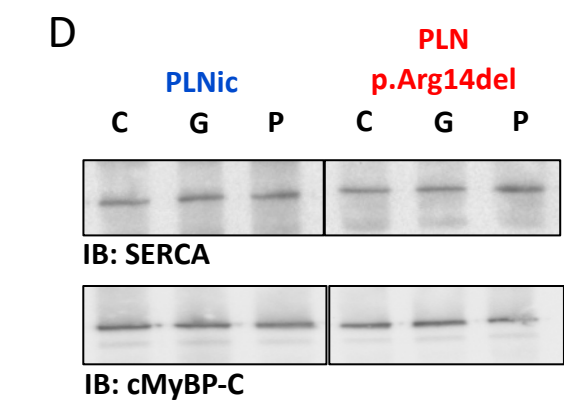
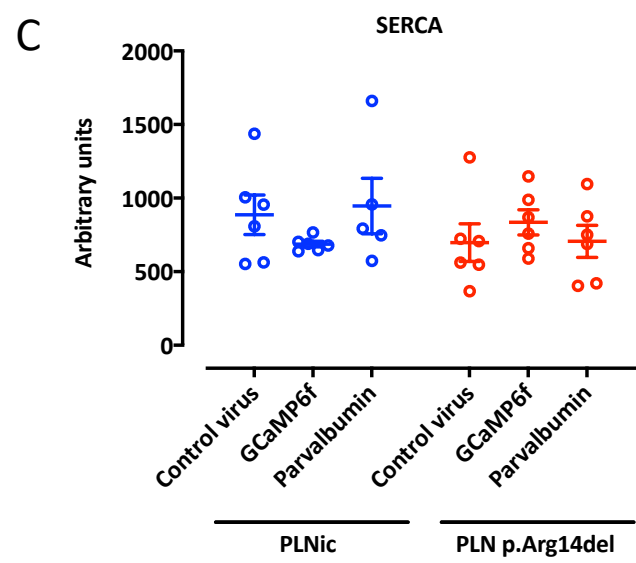
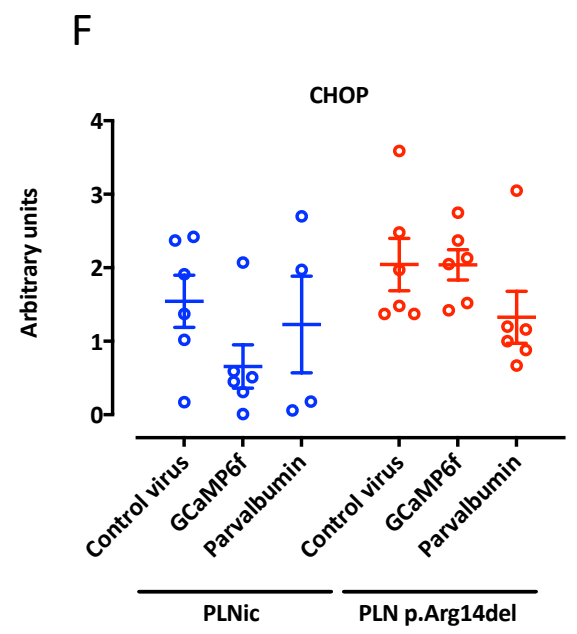
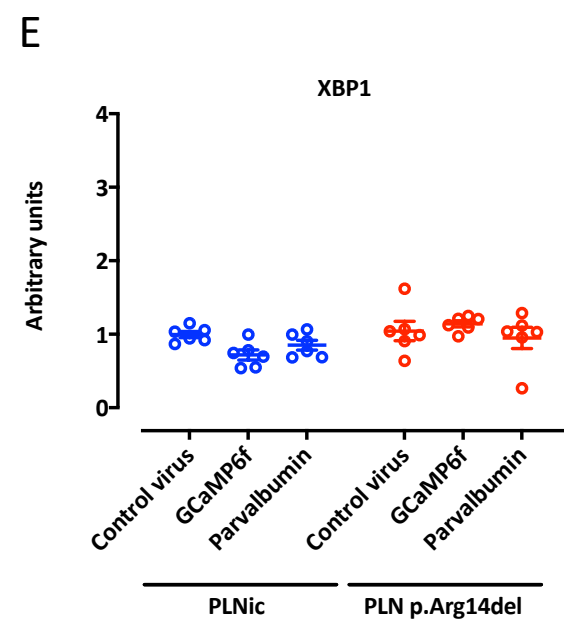
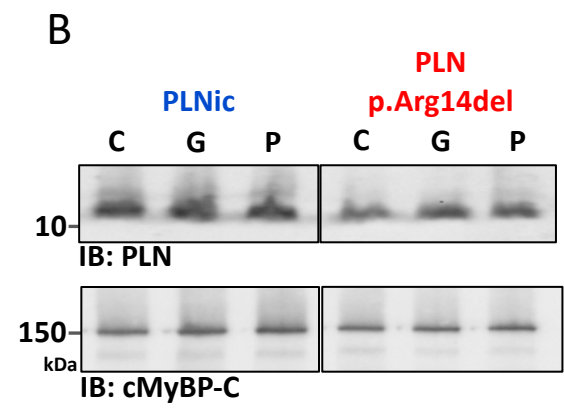
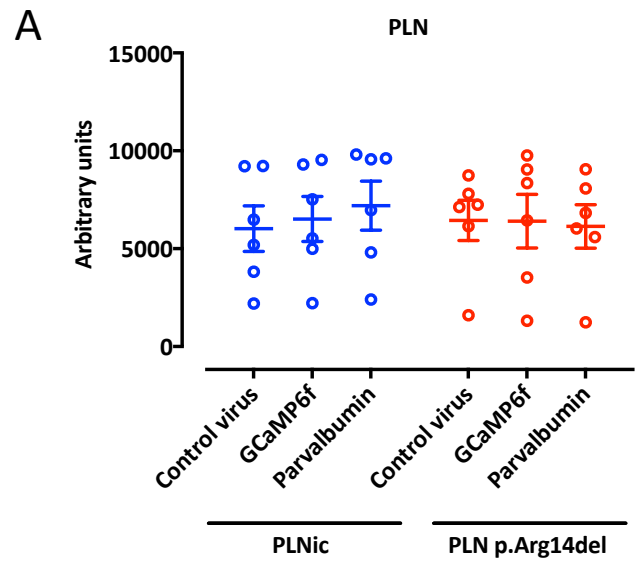
Parvalbumin

DAPI



**Appendix Figure S7.** Immunofluorescence of 2D hiPSC-CM from PLN<sup>Nic</sup> and PLN p.Arg14del after transduction with a control virus **A.**, a virus encoding for GCaMP6f **B.** or parvalbumin **C.** with antibodies recognizing PLN (red), SERCA2 (green), DAPI staining for nuclei (blue), **D.** PLN p.Arg14del hiPSC-CM after transduction with a virus encoding for GCaMP6f using an antibody detecting GFP, **E.** PLN p.Arg14del hiPSC-CM after transduction with a virus encoding for parvalbumin with an antibody detecting parvalbumin; scale bar 20  $\mu\text{m}$ .

# Appendix Figure S8

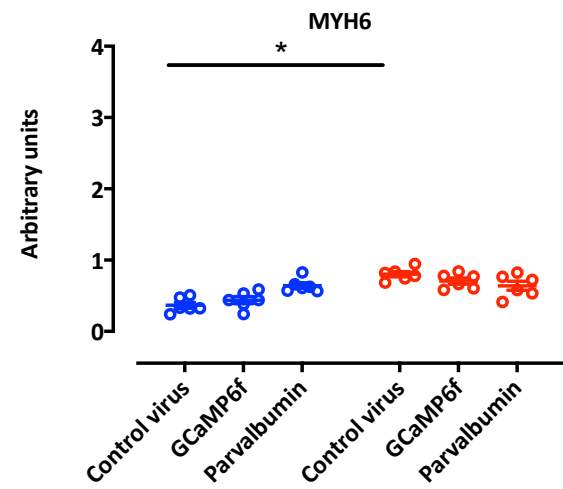




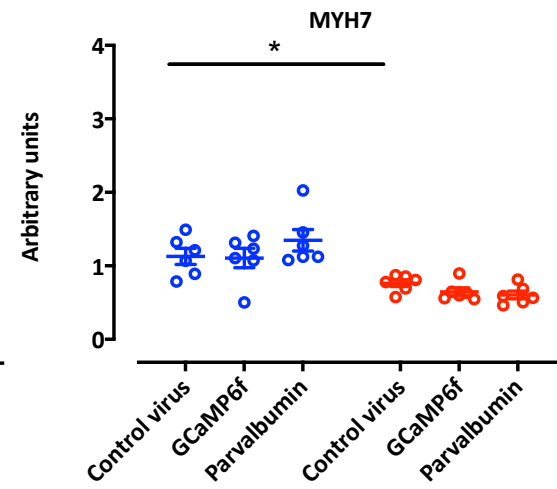
**Appendix Figure S8. A-D.** Western immunoblots for PLN and SERCA2 for PLNic and PLN p.Arg14del hiPSC-CM after transduction with control-, GCaMP6f- or parvalbumin-virus, n= 6-9, each replicate consists of a pool of 2-3 EHTs. Two-way ANOVA (comparing genotypes and virus conditions with Šidák`s post-test, mean  $\pm$  SEM, \*p<0.05. C: control virus, G: GCaMP6f virus. P: parvalbumin virus. **E-G.** Quantitative PCR of ER stress marker genes. PLNic and PLN p.Arg14del EHT after transduction with control-, GCaMP6f- or parvalbumin-virus; n= 6; each replicate consists of a pool of 2-3 EHTs. Two-way ANOVA (comparing genotypes and virus conditions) with Šidák`s post-test, mean  $\pm$  SEM , \*p<0.05.

# Appendix Figure S9

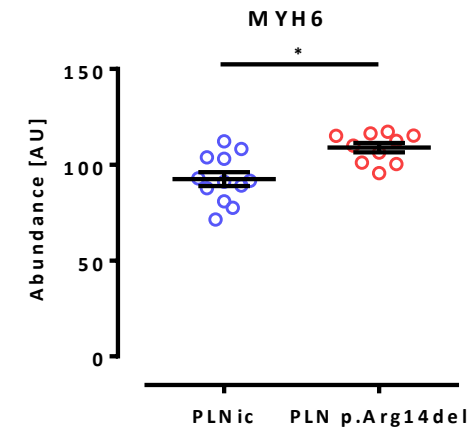
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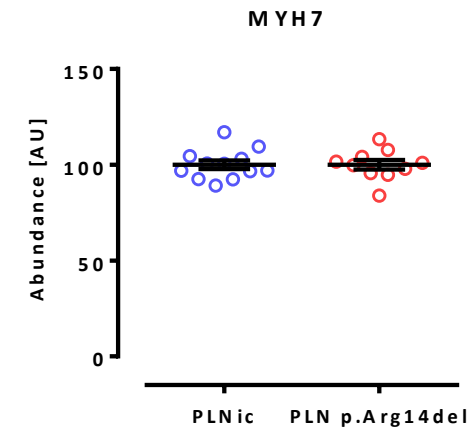
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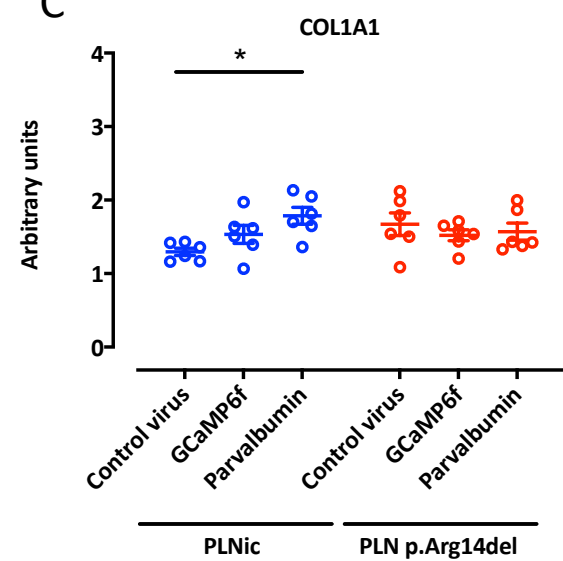
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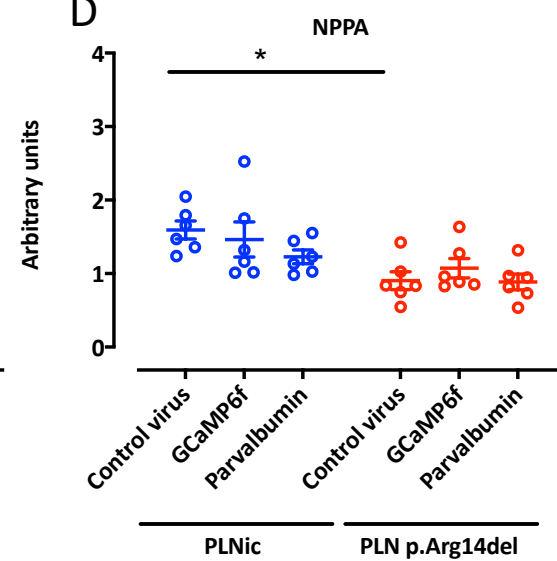
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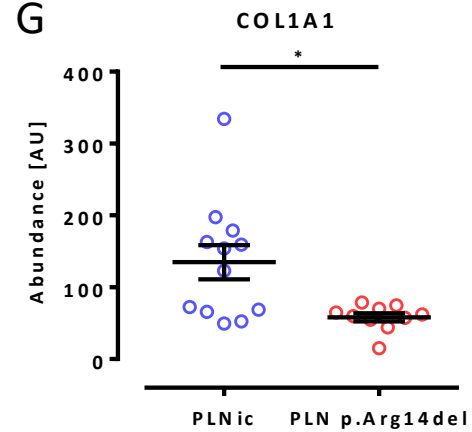
C



D



G



D

**Appendix Figure S9.** Fetal gene program markers. **A.** Quantitative PCR for *MYH6*, *MYH7*, *COL1A1* and *NPPA* of PLNic and PLN p.Arg14del EHTs after transduction with control-, GCaMP6f- or parvalbumin-virus; n= 6; each replicate consists of a pool of 2-3 EHTs. Two-way ANOVA (comparing genotypes and virus conditions) with Šidák's post-test, mean  $\pm$  SEM, \*p<0.05. **B.** Protein abundance of MYH6, MYH7 and COL1A1 in the proteomic screen, data extracted from **Table EV1**, PLNic: n=12, PLN p.Arg14del n=10, mean $\pm$ SEM, false discovery rate, \* p<0.05. NPPA not detected.

Figure	Sample	Replicate number	p value	Statistical test
<b>2B</b>	NFH left ventricle	5	0,0002	1way ANOVA
	PLNic, EHT	8		
	PLN p.Arg14del, EHT	8		
<b>2D</b>	PLNic, EHT, baseline	8	0,0417	2way ANOVA
	PLNic, EHT, ISO	8	PM vs. PM + Iso	
	PLN p.Arg14del, EHT baseline	8		
	PLN p.Arg14del, EHT, ISO	8		
<b>2E</b>	PLNic, EHT, baseline	27, 6 experiments	< 0.0001	1way ANOVA
	PLNic, EHT, ISO	27, 6 experiments		
	PLN p.Arg14del, EHT baseline	19, 6 experiments	< 0.0001	1way ANOVA
	PLN p.Arg14del, EHT, ISO	19, 6 experiments		
<b>2F</b>	PLNic, EHT, baseline	27, 6 experiments	< 0.0001	1way ANOVA
	PLNic, EHT, ISO	27, 6 experiments		
	PLN p.Arg14del, EHT baseline	19, 6 experiments	< 0.0001	1way ANOVA
	PLN p.Arg14del, EHT, ISO	19, 6 experiments		
<b>3A</b>	PLNic, EHT	70, 10 experiments	< 0.0001	Mann-Whitney U
	PLN p.Arg14del, EHT	77, 10 experiments		
<b>3B</b>	PLNic, EHT	70, 10 experiments	< 0.0001	Mann-Whitney U
	PLN p.Arg14del, EHT	77, 10 experiments		
<b>3C</b>	PLNic, EHT	67, 9 experiments	< 0.0001	Mann-Whitney U
	PLN p.Arg14del, EHT	65, 9 experiments		
<b>3D</b>	PLNic, EHT	67, 9 experiments	0,0106	Mann-Whitney U
	PLN p.Arg14del, EHT	65, 9 experiments		
<b>3G</b>	PLNic, EHT	21, 8 experiments	< 0.0001	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT	35, 8 experiments		
<b>3H</b>	PLNic, EHT	67, 9 experiments	0,1287	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT	65, 9 experiments		
<b>3I</b>	PLNic, EHT	67, 9 experiments	0,1604	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT	65, 9 experiments		
<b>3J</b>	PLNic, EHT	67, 9 experiments	< 0.0001	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT	65, 9 experiments		
<b>4B</b>	PLNic, 2D hiPSC-CM	25, 2 experiments	0,6519	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
<b>4C</b>	PLNic, 2D hiPSC-CM	25, 2 experiments	0,8313	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
<b>4D</b>	PLNic, 2D hiPSC-CM	25, 2 experiments	0,0011	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
<b>4E</b>	PLNic, 2D hiPSC-CM	25, 2 experiments	0,0646	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
<b>4G</b>	PLNic, EHT	24, 32, 41, 5 experiments	0.6537 (interaction)	2way ANOVA, Tukey's post test
	PLN p.Arg14del, EHT		0.0187 (row factor)	
			< 0,0001 (column factor)	
<b>5C</b>	PLNic, EHT	12, 2 batches	< 0.05	Benjamini-Hochberg, Multiple testing
	PLN p.Arg14del, EHT	10, 1 batch		

Figure	Sample	Replicate number	p value	Statistical test
<b>6B</b>	PLNic, 2D hiPSC-CM	6	0,0022	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6C</b>	PLNic, 2D hiPSC-CM	6	0,0152	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6D</b>	PLNic, 2D hiPSC-CM	6	0,0022	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6E</b>	PLNic, EHT	8	0,0002	Mann-Whitney U
	PLN p.Arg14del, EHT	8		
<b>7B</b>	NFH	3, 15	< 0.0001	1way ANOVA, Tukey's post test
	FH ICM	2, 10		
	FH PLN CM	3, 14		
<b>7C</b>	NFH	3, 15	< 0.0001	1way ANOVA, Tukey's post test
	FH ICM	3, 15		
	FH PLN CM	3, 15		
<b>8A</b>	PLNic, EHT, control virus	6	0.0005 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0007 (row factor)	
	PLNic, EHT, parvalbumin	6	0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8C</b>	PLNic, EHT, control virus	9	0.6280 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	9	0.0186 (row factor)	
	PLNic, EHT, parvalbumin	9	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	9		
	PLN p.Arg14del, EHT, GCaMP6f	9		
	PLN p.Arg14del, EHT, parvalbumin	9		
<b>8E</b>	PLNic, EHT, control virus	24	0.0001 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	23	0.0003 (row factor)	
	PLNic, EHT, parvalbumin	24	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	22		
	PLN p.Arg14del, EHT, GCaMP6f	24		
	PLN p.Arg14del, EHT, parvalbumin	22		
<b>8F</b>	PLNic, EHT, control virus	6	0.0002 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0664 (row factor)	
	PLNic, EHT, parvalbumin	6	0.0010 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8G</b>	PLNic, EHT, control virus	6	0.0007 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	< 0.0001 (row factor)	
	PLNic, EHT, parvalbumin	6	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8H</b>	PLNic, EHT, control virus	6	0.0693 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0387 (row factor)	
	PLNic, EHT, parvalbumin	6	0.8969 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		

Figure	Sample	Replicate number	p value	Statistical test
<b>6B</b>	PLNic, 2D hiPSC-CM	6	0,0022	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6C</b>	PLNic, 2D hiPSC-CM	6	0,0152	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6D</b>	PLNic, 2D hiPSC-CM	6	0,0022	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	6		
<b>6E</b>	PLNic, EHT	8	0,0002	Mann-Whitney U
	PLN p.Arg14del, EHT	8		
<b>7B</b>	NFH	3, 15	< 0.0001	1way ANOVA, Tukey's post test
	FH ICM	2, 10		
	FH PLN CM	3, 14		
<b>7C</b>	NFH	3, 15	< 0.0001	1way ANOVA, Tukey's post test
	FH ICM	3, 15		
	FH PLN CM	3, 15		
<b>8A</b>	PLNic, EHT, control virus	6	0.0005 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0007 (row factor)	
	PLNic, EHT, parvalbumin	6	0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8C</b>	PLNic, EHT, control virus	9	0.6280 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	9	0.0186 (row factor)	
	PLNic, EHT, parvalbumin	9	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	9		
	PLN p.Arg14del, EHT, GCaMP6f	9		
	PLN p.Arg14del, EHT, parvalbumin	9		
<b>8E</b>	PLNic, EHT, control virus	24	0.0001 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	23	0.0003 (row factor)	
	PLNic, EHT, parvalbumin	24	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	22		
	PLN p.Arg14del, EHT, GCaMP6f	24		
	PLN p.Arg14del, EHT, parvalbumin	22		
<b>8F</b>	PLNic, EHT, control virus	6	0.0002 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0664 (row factor)	
	PLNic, EHT, parvalbumin	6	0.0010 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8G</b>	PLNic, EHT, control virus	6	0.0007 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	< 0.0001 (row factor)	
	PLNic, EHT, parvalbumin	6	< 0.0001 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		
<b>8H</b>	PLNic, EHT, control virus	6	0.0693 (interaction)	2way ANOVA, Sidak's post test
	PLNic, EHT, GCaMP6f	6	0.0387 (row factor)	
	PLNic, EHT, parvalbumin	6	0.8969 (column factor)	
	PLN p.Arg14del, EHT, control virus	6		
	PLN p.Arg14del, EHT, GCaMP6f	6		
	PLN p.Arg14del, EHT, parvalbumin	6		

Figure	Sample	Replicate number	p value	Statistical test
EV1B	PLN <sup>ic</sup> , EHT, pPDH	6	0,0013	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, pPDH	6		
EV1B	PLN <sup>ic</sup> , EHT, pAMPK	6	0,0072	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, pAMPK	6		
EV1B	PLN <sup>ic</sup> , EHT, galectin-3	3	0,0252	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, galectin-3	3		
EV1B	PLN <sup>ic</sup> , EHT, SLTM	3	0,0006	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, SLTM	3		
EV1B	PLN <sup>ic</sup> , EHT, LMCD1	3	0,0006	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, LMCD1	3		
EV1B	PLN <sup>ic</sup> , EHT, calnexin	6	0,0009	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, calnexin	6		
EV1B	PLN <sup>ic</sup> , EHT, reticulocalbin-3	3	0,1592	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT, reticulocalbin-3	3		
Appendix Figure S2 C	PLN <sup>ic</sup> , 2D hiPSC-CM	25, 2 experiments	0,1158	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
Appendix Figure S2 D	PLN <sup>ic</sup> , 2D hiPSC-CM	25, 2 experiments	0,7249	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
Appendix Figure S2 E	PLN <sup>ic</sup> , 2D hiPSC-CM	25, 2 experiments	0,2926	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
Appendix Figure S2 F	PLN <sup>ic</sup> , 2D hiPSC-CM	25, 2 experiments	0,5632	Mann-Whitney U
	PLN p.Arg14del, 2D hiPSC-CM	24, 2 experiments		
Appendix Figure S3B	PLN <sup>ic</sup> , EHT	5	0,0159	Unpaired two-sided Student's t-test
	PLN p.Arg14del, EHT	4		
Appendix Figure S3D-K	PLN <sup>ic</sup> , EHT	12, 2 batches	<0.05	Benjamini-Hochberg, Multiple testi
	PLN p.Arg14del, EHT	10, 1 batch		
Appendix Figure S5A	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	2.04x10 <sup>-5</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5B	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	3.031x10 <sup>-4</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5C	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	3.574x10 <sup>-8</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5D	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	3.056x10 <sup>-6</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5E	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	6.007x10 <sup>-10</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5F	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	1.999x10 <sup>-2</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5G	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	8.967x10 <sup>-1</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5H	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	2.607x10 <sup>-6</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		
Appendix Figure S5I	PLN <sup>ic</sup> , hiPSC EBs	3-4/time point	6.969x10 <sup>-1</sup>	Unpaired two-sided Student's t-test
	PLN p.Arg14del, hiPSC EBs	3-4/time point		

Figure	Sample	Replicate number	p value	Statistical test
Appendix Figure S6B	PLNic, EHT	19	0,8326	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6C	PLNic, EHT	19	0,9827	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6D	PLNic, EHT	19	0,1069	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6E	PLNic, EHT	19	0,8326	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6G	PLNic, EHT	19	0,004	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6H	PLNic, EHT	19	0,1849	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6I	PLNic, EHT	19	0,154	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S6J	PLNic, EHT	19	0,0379	Mann-Whitney U
	PLN p.Arg14del, EHT	21		
Appendix Figure S8A	PLNic, EHT	6	0.8190 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.9350 (row factor)	
Appendix Figure S8C			0.8009 (column factor)	
	PLNic, EHT	6	0.2136 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.8621 (row factor)	
Appendix Figure S8E			0.3368 (column factor)	
	PLNic, EHT	6	0.1022 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.4141 (row factor)	
Appendix Figure S8F			0.0168 (column factor)	
	PLNic, EHT	6	0.2124 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.3100 (row factor)	
Appendix Figure S8G			0.0338 (column factor)	
	PLNic, EHT	6	0.3794 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.4426 (row factor)	
Appendix Figure S9A			0.2064 (column factor)	
	PLNic, EHT	6	0.0002 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.2981 (row factor)	
Appendix Figure S9B			<0.0001 (column factor)	
	PLNic, EHT	6	0.1527 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.5926 (row factor)	
Appendix Figure S9C			<0.0001 (column factor)	
	PLNic, EHT	6	0.0374 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.1990 (row factor)	
Appendix Figure S9D			0.5857 (column factor)	
	PLNic, EHT	6	0.4352 (interaction)	2way ANOVA, Sidak's post test
	PLN p.Arg14del, EHT	6	0.2850 (row factor)	
Appendix Figure S9E			0.0003 (column factor)	
	PLNic, EHT	12, 2 batches	<0.05	Benjamini-Hochberg, Multiple testi
	PLN p.Arg14del, EHT	10, 1 batch		
Appendix Figure S9F	PLNic, EHT	12, 2 batches	<0.05	Benjamini-Hochberg, Multiple testi
	PLN p.Arg14del, EHT	10, 1 batch		
Appendix Figure S9G	PLNic, EHT	12, 2 batches	<0.05	Benjamini-Hochberg, Multiple testi
	PLN p.Arg14del, EHT	10, 1 batch		



## Appendix Figure S10. Statistical details