

Table S1: Table of Alleles used for experiments

Allele	Abbreviated Allele	Reference
<i>Cntn2</i> ^{3'UTR-IRES-Cre-EGFP}	<i>Cntn2</i> ^{Cre-EGFP/+}	Bhattacharyya, S., M. Bhakta, and N.V. Munshi, <i>Phenotypically silent Cre recombination within the postnatal ventricular conduction system</i> . PLoS One, 2017. 12 (3): p. e0174517
<i>Hand1</i> ^{LV-Cre}	<i>Hand1</i> ^{LV-Cre}	Vincentz, J.W., et al., <i>Hand factor ablation causes defective left ventricular chamber development and compromised adult cardiac function</i> . PLoS Genet, 2017. 13 (7): p. e1006922
<i>Hand1</i> ^{tm2Eno}	<i>Hand1</i> ^{fx/fx} (H1control)	McFadden, D.G., et al., <i>The Hand1 and Hand2 transcription factors regulate expansion of the embryonic cardiac ventricles in a gene dosage-dependent manner</i> . Development, 2005. 132 (1): p. 189-201
<i>Hand2</i> ^{tm1Cse}	<i>Hand2</i> ^{fx/fx} (H2control)	Morikawa, Y. and P. Cserjesi, <i>Cardiac neural crest expression of Hand2 regulates outflow and second heart field development</i> . Circ Res, 2008. 103 (12): p. 1422-9
<i>Hand1</i> ^{fx/fx} <i>Hand2</i> ^{fx/fx}	H1H2control	
<i>Cntn2</i> ^{Cre-EGFP/+} ; <i>Hand1</i> ^{fx/fx}	H1CKO	
<i>Cntn2</i> ^{Cre-EGFP/+} ; <i>Hand2</i> ^{fx/fx}	H2CKO	
<i>Cntn2</i> ^{Cre-EGFP/+} ; <i>Hand1</i> ^{fx/fx} ; <i>Hand2</i> ^{fx/fx}	H1H2CKO	
<i>Hand1</i> ^{LV-Cre} ; <i>Hand2</i> ^{fx/fx}	H2LVCreCKO	