

## Použitá literatura - Errata

\*Aanhaanen, W.T.J., Mommersteeg, M.T.M., Norden, J., Wakker, V., de Gier-de Vries, C., Anderson, R.H., Kispert, A., Moorman, A.F.M., and Christoffels, V.M. (2010). Developmental origin, growth, and three-dimensional architecture of the atrioventricular conduction axis of the mouse heart. *Circ. Res.* *107*, 728–736.

Aanhaanen, W.T.J., Boukens, B.J.D., Sizarov, A., Wakker, V., de Gier-de Vries, C., van Ginneken, A.C., Moorman, A.F.M., Coronel, R., and Christoffels, V.M. (2011). Defective Tbx2-dependent patterning of the atrioventricular canal myocardium causes accessory pathway formation in mice. *J. Clin. Invest.* *121*, 534–544.

\*Aggarwal, V., Dobrolet, N., Fishberger, S., Zablach, J., Jayakar, P., and Ammous, Z. (2015). PRKAG2 mutation: An easily missed cardiac specific non-lysosomal glycogenosis. *Ann Pediatr Cardiol* *8*, 153–156.

Alanis, J., Gonzalez, H., and Lopez, E. (1958). The electrical activity of the bundle of His. *J. Physiol. (Lond.)* *142*, 127–140.

Ambrosi, A., and Wahren-Herlenius, M. (2012). Congenital heart block: evidence for a pathogenic role of maternal autoantibodies. *Arthritis Res Ther* *14*, 208.

Anderson, R.H. (1972). The disposition and innervation of atrioventricular ring specialized tissue in rats and rabbits. *J. Anat.* *113*, 197–211.

\*Anderson, R.H., and Becker, A.E. (1981). Stanley Kent and accessory atrioventricular connections. *J. Thorac. Cardiovasc. Surg.* *81*, 649–658.

Anderson, R.H., Ho, S.Y., and Becker, A.E. (1983). The surgical anatomy of the conduction tissues. *Thorax* *38*, 408–420.

Arbel, E.R., Liberthson, R., Langendorf, R., Pick, A., Lev, M., and Fishman, A.P. (1977). Electrophysiological and anatomical observations on the heart of the African lungfish. *Am. J. Physiol.* *232*, H24-34.

Arnolds, D.E., Liu, F., Fahrenbach, J.P., Kim, G.H., Schillinger, K.J., Smemo, S., McNally, E.M., Nobrega, M.A., Patel, V.V., and Moskowitz, I.P. (2012). TBX5 drives Scn5a expression to regulate cardiac conduction system function. *J Clin Invest* *122*, 2509–2518.

Atoui, M., Gunda, S., Lakkireddy, D., and Mahapatra, S. (2015). Radiofrequency Ablation to Prevent Sudden Cardiac Death. *Methodist DeBakey Cardiovasc J* *11*, 121–128.

Baban, A., Pitto, L., Pulignani, S., Cresci, M., Mariani, L., Gambacciani, C., Digilio, M.C., Pongiglione, G., and Albanese, S. (2014). Holt-Oram syndrome with intermediate atrioventricular canal defect, and aortic coarctation: functional characterization of a de novo TBX5 mutation. *Am. J. Med. Genet. A* *164A*, 1419–1424.

\*Bakker, M.L., Moorman, A.F.M., and Christoffels, V.M. (2010). The atrioventricular node: origin, development, and genetic program. *Trends Cardiovasc. Med.* *20*, 164–171.

\*Baruteau, A.-E., Pass, R.H., Thambo, J.-B., Behaghel, A., Le Pennec, S., Perdreau, E., Combes, N., Liberman, L., and McLeod, C.J. (2016). Congenital and childhood atrioventricular blocks: pathophysiology and contemporary management. *Eur J Pediatr* *175*, 1235–1248.

Basso, C., Corrado, D., Rossi, L., and Thiene, G. (2001). Ventricular preexcitation in children and young adults: atrial myocarditis as a possible trigger of sudden death. *Circulation* *103*, 269–275.

Becker, A.E., Anderson, R.H., Wellens, J.H., and Durrer, D. (1976). Proceedings: Anatomy of ventricular pre-excitation. *Br Heart J* *38*, 879.

Becker, A.E., Anderson, R.H., Durrer, D., and Wellens, H.J. (1978). The anatomical substrates of wolff-parkinson-white syndrome. A clinicopathologic correlation in seven

patients. *Circulation* 57, 870–879.

Brucato, A., Jonzon, A., Friedman, D., Allan, L.D., Vignati, G., Gasparini, M., Stein, J.I., Montella, S., Michaelsson, M., and Buyon, J. (2003). Proposal for a new definition of congenital complete atrioventricular block. *Lupus* 12, 427–435.

\*Calkins, H. (2017). Editorial commentary: Wolff-Parkinson-White pattern and syndrome: Where do we stand in 2017? *Trends Cardiovasc. Med.* 27, 269–270.

Cheng, G., Litchenberg, W.H., Cole, G.J., Mikawa, T., Thompson, R.P., and Gourdie, R.G. (1999). Development of the cardiac conduction system involves recruitment within a multipotent cardiomyogenic lineage. *Development* 126, 5041–5049.

Chi, N.C., Shaw, R.M., Jungblut, B., Huisken, J., Ferrer, T., Arnaout, R., Scott, I., Beis, D., Xiao, T., Baier, H., et al. (2008). Genetic and physiologic dissection of the vertebrate cardiac conduction system. *PLoS Biol.* 6, e109.

Chiari, Y., Cahais, V., Galtier, N., and Delsuc, F. (2012). Phylogenomic analyses support the position of turtles as the sister group of birds and crocodiles (Archosauria). *BMC Biology* 10, 65.

Chowdhury, R., Ashraf, H., Melanson, M., Tanada, Y., Nguyen, M., Silberbach, G.M., Wakimoto, H., Benson, D.W., Anderson, R.H., and Kasahara, H. (2015). A Mouse Model of Human Congenital Heart Disease: Progressive Atrioventricular Block Induced by a Heterozygous Nkx2-5 Homeodomain Missense Mutation. *Circ Arrhythm Electrophysiol* 8, 1255–1264.

\*Christoffels, V., and Moorman, A. (2009). Development of the Cardiac Conduction System Why Are Some Regions of the Heart More Arrhythmogenic Than Others? *CIRCULATION-ARRHYTHMIA AND ELECTROPHYSIOLOGY* 2, 195–207.

\*Christoffels, V.M., Smits, G.J., Kispert, A., and Moorman, A.F. (2010). Development of the pacemaker tissues of the heart. *Circulation Research* 106, 240–254.

Chuck, E.T., Freeman, D.M., Watanabe, M., and Rosenbaum, D.S. (1997). Changing activation sequence in the embryonic chick heart. Implications for the development of the His-Purkinje system. *Circulation Research* 81, 470–476.

Davies, F. (1930a). Further studies of the conducting system of the bird's heart. *Journal of Anatomy* 64, 319.

Davies, F. (1930b). The conducting system of the bird's heart. *Journal of Anatomy* 64, 129.

Davies, F. (1942). The conducting system of the vertebrate heart. *British Heart Journal* 4, 66.

Davies, F., and Francis, E.T.B. (1941). The heart of the salamander (*Salamandra salamandra*, L.), with special reference to the conducting (connecting) system and its bearing on the phylogeny of the conducting systems of mammalian and avian hearts. *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 231, 99–130.

Davies, F., and Francis, E.T.B. (1946). The conducting system of the vertebrate heart. *Biol Rev Camb Philos Soc* 21, 173–188.

Davies, F., Francis, E.T.B., and King, T.S. (1952). The conducting (connecting) system of the crocodilian heart. *Journal of Anatomy* 86, 152.

Davies, M.J., Anderson, R.H., and Becker, A.E. (1983). Embryology of the conduction tissues. *The Conduction System of the Heart*. London: Butterworths 81–94.

\*Deal, B.J., Keane, J.F., Gillette, P.C., and Garson, A. (1985). Wolff-Parkinson-White syndrome and supraventricular tachycardia during infancy: management and follow-up. *J. Am. Coll. Cardiol.* 5, 130–135.

Frink, R.J., and James, T.N. (1973). Normal blood supply to the human His bundle and proximal bundle branches. *Circulation* 47, 8–18.

Fujii, S., Hirota, A., and Kamino, K. (1981). Action potential synchrony in embryonic

precontractile chick heart: optical monitoring with potentiometric dyes. *J. Physiol. (Lond.)* 319, 529–541.

Gaussin, V., Morley, G.E., Cox, L., Zwijsen, A., Vance, K.M., Emile, L., Tian, Y., Liu, J., Hong, C., Myers, D., et al. (2005). Alk3/Bmpr1a receptor is required for development of the atrioventricular canal into valves and annulus fibrosus. *Circ. Res.* 97, 219–226.

Gollob, M.H., Green, M.S., Tang, A.S., Gollob, T., Karibe, A., Ali Hassan, A.S., Ahmad, F., Lozado, R., Shah, G., Fananapazir, L., et al. (2001). Identification of a gene responsible for familial Wolff-Parkinson-White syndrome. *N. Engl. J. Med.* 344, 1823–1831.

Gollob, M.H., Green, M.S., Tang, A.S.L., and Roberts, R. (2002). PRKAG2 cardiac syndrome: familial ventricular preexcitation, conduction system disease, and cardiac hypertrophy. *Curr. Opin. Cardiol.* 17, 229–234.

Gorza, L., Schiaffino, S., and Vitadello, M. (1988). Heart conduction system: a neural crest derivative? *Brain Res.* 457, 360–366.

Goudevenos, J.A., Katsouras, C.S., Graekas, G., Argiri, O., Giogiakas, V., and Sideris, D.A. (2000). Ventricular pre-excitation in the general population: a study on the mode of presentation and clinical course. *Heart* 83, 29–34.

Gourdie, R.G., Wei, Y., Kim, D., Klatt, S.C., and Mikawa, T. (1998). Endothelin-induced conversion of embryonic heart muscle cells into impulse-conducting Purkinje fibers. *Proc. Natl. Acad. Sci. U.S.A.* 95, 6815–6818.

\*Graham, A. (2000). The evolution of the vertebrates--genes and development. *Curr. Opin. Genet. Dev.* 10, 624–628.

Gregorovicova, M., Sedmera, D., and Jensen, B. (2018). Relative position of the atrioventricular canal determines the electrical activation of developing reptile ventricles. *J. Exp. Biol.* 221.

Gros, D., Dupays, L., Alcoléa, S., Meysen, S., Miquerol, L., and Théveniau-Ruissy, M. (2004). Genetically modified mice: tools to decode the functions of connexins in the heart--new models for cardiovascular research. *Cardiovasc. Res.* 62, 299–308.

Gurjarpadhye, A., Hewett, K.W., Justus, C., Wen, X., Stadt, H., Kirby, M.L., Sedmera, D., and Gourdie, R.G. (2007). Cardiac neural crest ablation inhibits compaction and electrical function of conduction system bundles. *Am. J. Physiol. Heart Circ. Physiol.* 292, H1291–1300.

Hahurij, N., Groot, A., Kolditz, D., Bokenkamp, R., Schalij, M., Poelmann, R., and Blom, N. (2008). Accessory atrioventricular myocardial connections in the developing human heart - Relevance for perinatal supraventricular tachycardias. *Circulation* 117, 2850–2858.

Hahurij, N., Kolditz, D., Bokenkamp, R., Markwald, R., Schalij, M., Poelmann, R., Gittenberger-de Groot, A., and Blom, N. (2011). Accessory Atrioventricular Myocardial Pathways in Mouse Heart Development: Substrate for Supraventricular Tachycardias. *PEDIATRIC RESEARCH* 70, 37–43.

Hamburger, V., and Hamilton, H.L. (1992). A series of normal stages in the development of the chick embryo. 1951. *Dev. Dyn.* 195, 231–272.

\*His, W. (1893). Die Tätigkeit des embryonalen Herzens und deren Bedeutung für die Lehre von der Herzbewegung beim Erwachsenen. *Arb Med Klin (Leipzig)* 14.

Hoff, E.C., Kramer, T.C., DuBois, D., and Patten, B.M. (1939). The development of the electrocardiogram of the embryonic heart. *American Heart Journal* 17, 470–488.

Holt, M., and Oram, S. (1960). FAMILIAL HEART DISEASE WITH SKELETAL MALFORMATIONS. *Br Heart J* 22, 236–242.

Hoogaars, W.M.H., Tessari, A., Moorman, A.F.M., de Boer, P.A.J., Hagoort, J., Soufan, A.T., Campione, M., and Christoffels, V.M. (2004). The transcriptional repressor Tbx3 delineates the developing central conduction system of the heart. *Cardiovascular Research* 62, 489–499.

- Hunter, L.E., and Simpson, J.M. (2015). Atrioventricular block during fetal life. *J Saudi Heart Assoc* 27, 164–178.
- Icardo, J.M. (2006). Conus arteriosus of the teleost heart: dismissed, but not missed. *Anat Rec A Discov Mol Cell Evol Biol* 288, 900–908.
- Icardo, J.M., and Colvee, E. (2011). The atrioventricular region of the teleost heart. A distinct heart segment. *Anat Rec (Hoboken)* 294, 236–242.
- Jaeggi, E.T., Hamilton, R.M., Silverman, E.D., Zamora, S.A., and Hornberger, L.K. (2002). Outcome of children with fetal, neonatal or childhood diagnosis of isolated congenital atrioventricular block. A single institution's experience of 30 years. *J. Am. Coll. Cardiol.* 39, 130–137.
- James, T.N., and Sherf, L. (1971). Fine structure of the His bundle. *Circulation* 44, 9–28.
- Jay, P.Y., Harris, B.S., Maguire, C.T., Buerger, A., Wakimoto, H., Tanaka, M., Kupersmidt, S., Roden, D.M., Schultheiss, T.M., O'Brien, T.X., et al. (2004). Nkx2-5 mutation causes anatomic hypoplasia of the cardiac conduction system. *J Clin Invest* 113, 1130–1137.
- Jensen, B., Boukens, B.J.D., Postma, A.V., Gunst, Q.D., van den Hoff, M.J.B., Moorman, A.F.M., Wang, T., and Christoffels, V.M. (2012). Identifying the evolutionary building blocks of the cardiac conduction system. *PLoS ONE* 7, e44231.
- \*Jensen, B., Wang, T., Christoffels, V.M., and Moorman, A.F.M. (2013a). Review: Evolution and development of the building plan of the vertebrate heart. *BBA - Molecular Cell Research* 1833, 783–794.
- Jensen, B., van den Berg, G., van den Doel, R., Oostra, R., Wang, T., and Moorman, A. (2013b). Development of the Hearts of Lizards and Snakes and Perspectives to Cardiac Evolution. *PLOS ONE* 8.
- Jensen, B., Boukens, B.J., Crossley, D.A., Conner, J., Mohan, R.A., van Duijvenboden, K., Postma, A.V., Gloschat, C.R., Elsey, R.M., Sedmera, D., et al. (2018). Specialized impulse conduction pathway in the alligator heart. *Elife* 7.
- Jongbloed, M.R.M., Wijffels, M.C.E.F., Schalij, M.J., Blom, N.A., Poelmann, R.E., van der Laarse, A., Mentink, M.M.T., Wang, Z., Fishman, G.I., and Gittenberger-de Groot, A.C. (2005). Development of the right ventricular inflow tract and moderator band: a possible morphological and functional explanation for Mahaim tachycardia. *Circ. Res.* 96, 776–783.
- Kabunga, P., Lau, A.K., Phan, K., Puranik, R., Liang, C., Davis, R.L., Sue, C.M., and Sy, R.W. (2015). Systematic review of cardiac electrical disease in Kearns-Sayre syndrome and mitochondrial cytopathy. *Int. J. Cardiol.* 181, 303–310.
- Kanter, R.J., Pfeiffer, R., Hu, D., Barajas-Martinez, H., Carboni, M.P., and Antzelevitch, C. (2012). Brugada-Like Syndrome in Infancy Presenting With Rapid Ventricular Tachycardia and Intraventricular Conduction Delay. *Circulation* 125, 14–22.
- Keibel, F., and Mall, F.P. (1910). *Manual of Human Embryology I.* (Philadelphia: J. B. Lippincott Company).
- Ko, J.K., Deal, B.J., Strasburger, J.F., and Benson, D.W. (1992). Supraventricular tachycardia mechanisms and their age distribution in pediatric patients. *Am. J. Cardiol.* 69, 1028–1032.
- Kolditz, D.P., Wijffels, M.C., Blom, N.A., van der Laarse, A., Markwald, R.R., Schalij, M.J., and Gittenberger-de Groot, A.C. (2007). Persistence of functional atrioventricular accessory pathways in postseptated embryonic avian hearts. *Circulation* 115, 17–26.
- Kolditz, D.P., Wijffels, M.C., Blom, N.A., van der Laarse, A., Hahurij, N.D., Lie-Venema, H., Markwald, R.R., Poelmann, R.E., Schalij, M.J., and Gittenberger-de Groot, A.C. (2008). Epicardium-derived cells in development of annulus fibrosis and persistence of accessory pathways. *Circulation* 117, 1508–1517.

Koshiba-Takeuchi, K., Mori, A.D., Kaynak, B.L., Cebra-Thomas, J., Sukonnik, T., Georges, R.O., Latham, S., Beck, L., Beck, L., Henkelman, R.M., et al. (2009). Reptilian heart development and the molecular basis of cardiac chamber evolution. *Nature* *461*, 95–98.

Kucera, J.P., Kléber, A.G., and Rohr, S. (1998). Slow conduction in cardiac tissue, II: effects of branching tissue geometry. *Circ. Res.* *83*, 795–805.

Kuck, K.-H., and Schluter, M. (1993). Junctional tachycardia and the role of catheter ablation. *The Lancet* *341*, 1386–1391.

Lalani, S.R., Thakuria, J.V., Cox, G.F., Wang, X., Bi, W., Bray, M.S., Shaw, C., Cheung, S.W., Chinault, A.C., Boggs, B.A., et al. (2009). 20p12.3 microdeletion predisposes to Wolff-Parkinson-White syndrome with variable neurocognitive deficits. *J. Med. Genet.* *46*, 168–175.

Lamers, W.H., Virágh, S., Wessels, A., Moorman, A.F., and Anderson, R.H. (1995). Formation of the tricuspid valve in the human heart. *Circulation* *91*, 111–121.

Le Gloan, L., Pichon, O., Isidor, B., Boceno, M., Rival, J.-M., David, A., and Le Caignec, C. (2008). A 8.26Mb deletion in 6q16 and a 4.95Mb deletion in 20p12 including JAG1 and BMP2 in a patient with Alagille syndrome and Wolff-Parkinson-White syndrome. *Eur J Med Genet* *51*, 651–657.

Lev, M., and Lerner, R. (1955). The theory of Kent; a histologic study of the normal atrioventricular communications of the human heart. *Circulation* *12*, 176–184.

Lu, Y., James, T.N., Yamamoto, S., and Terasaki, F. (1993). Cardiac conduction system in the chicken: gross anatomy plus light and electron microscopy. *Anat. Rec.* *236*, 493–510.

Makita, N., Seki, A., Sumitomo, N., Chkourko, H., Fukuhara, S., Watanabe, H., Shimizu, W., Bezzina, C.R., Hasdemir, C., Mugishima, H., et al. (2012). A Connexin 40 Mutation Associated with a Malignant Variant of Progressive Familial Heart Block Type-1. *Circ Arrhythm Electrophysiol* *5*, 163–172.

\*Männer, J., Pérez-Pomares, J.M., Macías, D., and Muñoz-Chápuli, R. (2001). The origin, formation and developmental significance of the epicardium: a review. *Cells Tissues Organs (Print)* *169*, 89–103.

\*Márquez, M.F., Moukabary, T., and Gonzalez, M.D. (2014). Jesús Alanís and the first recording of the his bundle: the scientist and the man. *Pacing Clin Electrophysiol* *37*, 1724–1727.

Michaëlsson, M., Riesenfeld, T., and Jonzon, A. (1997). Natural history of congenital complete atrioventricular block. *Pacing and Clinical Electrophysiology* *20*, 2098–2101.

Miquerol, L., Meysen, S., Mangoni, M., Bois, P., van Rijen, H.V.M., Abran, P., Jongasma, H., Nargeot, J., and Gros, D. (2004). Architectural and functional asymmetry of the His-Purkinje system of the murine heart. *Cardiovascular Research* *63*, 77–86.

Miquerol, L., Beyer, S., and Kelly, R.G. (2011). Establishment of the mouse ventricular conduction system. *Cardiovasc. Res.* *91*, 232–242.

\*Moorman, A., and Christoffels, V. (2003). Cardiac chamber formation: Development, genes, and evolution. *PHYSIOLOGICAL REVIEWS* *83*, 1223–1267.

Moskowitz, I.P.G., Kim, J.B., Moore, M.L., Wolf, C.M., Peterson, M.A., Shendure, J., Nobrega, M.A., Yokota, Y., Berul, C., Izumo, S., et al. (2007). Article: A Molecular Pathway Including Id2, Tbx5, and Nkx2-5 Required for Cardiac Conduction System Development. *Cell* *129*, 1365–1376.

Myers, D.C., and Fishman, G.I. (2003). Molecular and functional maturation of the murine cardiac conduction system. *Trends in Cardiovascular Medicine* *13*, 289–295.

Nair, M.G. (1973). The development of the nervous system in the heart of the Chinese carp, *Cyprinus carpio* (Linnaeus), with a special reference to its conducting system. *Mikroskopie* *29*, 1–7.

Olson, E.N. (2006). Gene regulatory networks in the evolution and development of the

heart. *Science* 313, 1922–1927.

\*Patten, B.M. (1949). Initiation and early changes in the character of the heart beat in vertebrate embryos. *Physiological Reviews* 29, 31–47.

Pennisi, D.J., Rentschler, S., Gourdie, R.G., Fishman, G.I., and Mikawa, T. (2004). Induction and patterning of the cardiac conduction system. *International Journal of Developmental Biology* 46, 765–775.

Poelmann, R.E., Jongbloed, M.R.M., Molin, D.G.M., Fekkes, M.L., Wang, Z., Fishman, G.I., Doetschman, T., Azhar, M., and Gittenberger-de Groot, A.C. (2004). The neural crest is contiguous with the cardiac conduction system in the mouse embryo: a role in induction? *Anat. Embryol.* 208, 389–393.

Poon, K.-L., Liebling, M., Kondrychyn, I., Brand, T., and Korzh, V. (2016). Development of the cardiac conduction system in zebrafish. *Gene Expr. Patterns* 21, 89–96.

Reckova, M., Rosengarten, C., deAlmeida, A., Stanley, C., Wessels, A., Gourdie, R., Thompson, R., and Sedmera, D. (2003). Hemodynamics is a key epigenetic factor in development of the cardiac conduction system. *CIRCULATION RESEARCH* 93, 77–85.

Rentschler, S., Vaidya, D.M., Tamaddon, H., Degenhardt, K., Sassoon, D., Morley, G.E., Jalife, J., and Fishman, G.I. (2001). Visualization and functional characterization of the developing murine cardiac conduction system. *Development* 128, 1785–1792.

Rentschler, S., Zander, J., Meyers, K., France, D., Levine, R., Porter, G., Rivkees, S.A., Morley, G.E., and Fishman, G.I. (2002). Neuregulin-1 promotes formation of the murine cardiac conduction system. *Proceedings of the National Academy of Sciences* 99, 10464–10469.

Rentschler, S., Harris, B.S., Kuznekoff, L., Jain, R., Manderfield, L., Lu, M.M., Morley, G.E., Patel, V.V., and Epstein, J.A. (2011). Notch signaling regulates murine atrioventricular conduction and the formation of accessory pathways. *J. Clin. Invest.* 121, 525–533.

Sano, S., Komori, S., Amano, T., Kohno, I., Ishihara, T., Sawanobori, T., Ijiri, H., and Tamura, K. (1998). Prevalence of ventricular preexcitation in Japanese schoolchildren. *Heart* 79, 374–378.

\*Scherlag, B.J., and Lazzara, R. (2017). Functional aspects of His bundle physiology and pathophysiology: Clinical implications. *J Electrocardiol* 50, 151–155.

Scott, J.S., Maddison, P.J., Taylor, P.V., Esscher, E., Scott, O., and Skinner, R.P. (1983). Connective-tissue disease, antibodies to ribonucleoprotein, and congenital heart block. *New England Journal of Medicine* 309, 209–212.

Sedmera, D., Reckova, M., Sedmerova, M., Biermann, M., Volejnik, J., Sarre, A., Raddatz, E., McCarthy, R.A., Gourdie, R.G., Thompson, R.P., et al. (2003). Functional and morphological evidence for a ventricular conduction system in zebrafish and *Xenopus* hearts. *American Journal of Physiology-Heart and Circulatory Physiology* 284, H1152–H1160.

\*Silverman, M.E., Grove, D., and Upshaw, C.B. (2006). Why does the heart beat? The discovery of the electrical system of the heart. *Circulation* 113, 2775–2781.

Sizarov, A., Devalla, H.D., Anderson, R.H., Passier, R., Christoffels, V.M., and Moorman, A.F.M. (2011). Molecular analysis of patterning of conduction tissues in the developing human heart. *Circ Arrhythm Electrophysiol* 4, 532–542.

\*Suma, K. (2001). Sunao Tawara: a father of modern cardiology. *Pacing Clin Electrophysiol* 24, 88–96.

\*Sylva, M., van den Hoff, M.J.B., and Moorman, A.F.M. (2014). Development of the human heart. *Am. J. Med. Genet. A* 164A, 1347–1371.

\*Taketazu, M., Loughheed, J., Yoo, S.-J., Lim, J.S., and Hornberger, L.K. (2006). Spectrum of cardiovascular disease, accuracy of diagnosis, and outcome in fetal heterotaxy syndrome. *The American Journal of Cardiology* 97, 720–724.

Tawara, S. (2000). *Das Reizleitungssystem Des Säugetierherzens [The Conduction System of the Mammalian Heart]*. Jena: Gustav Fischer; 1906. Suma K, Shimada M, trans (London, UK: Imperial College Press).

Taylor, P.V., Taylor, K.F., Norman, A., Giffiths, S., and Scott, J.S. (1988). Prevalence of maternal Ro (SS-A) and La (SS-B) autoantibodies in relation to congenital heart block. *Rheumatology* 27, 128–132.

Theiler, K. (1989). *The House Mouse, Atlas of Embryonic Development* (Department of Anatomy University of Zurich, Switzerland).

Tortoriello, T.A., Snyder, C.S., Smith, E., Fenrich Jr, A.L., Friedman, R.A., and Kertesz, N.J. (2003). Frequency of recurrence among infants with supraventricular tachycardia and comparison of recurrence rates among those with and without preexcitation and among those with and without response to digoxin and/or propranolol therapy. *The American Journal of Cardiology* 92, 1045–1049.

Virágh, S., and Challice, C.E. (1977a). The development of the conduction system in the mouse embryo heart: I. The first embryonic AV conduction pathway. *Developmental Biology* 56, 382–396.

Virágh, S., and Challice, C.E. (1977b). The development of the conduction system in the mouse embryo heart: II. Histogenesis of the atrioventricular node and bundle. *Developmental Biology* 56, 397–411.

Virágh, S., and Challice, C.E. (1983). The development of the early atrioventricular conduction system in the embryonic heart. *Can. J. Physiol. Pharmacol.* 61, 775–792.

Virágh, S.Z., and Challice, C.E. (1982). The development of the conduction system in the mouse embryo heart: IV. Differentiation of the atrioventricular conduction system. *Developmental Biology* 89, 25–40.

Warnes, C.A. (2006). Transposition of the great arteries. *Circulation* 114, 2699–2709.

van Weerd, J.H., and Christoffels, V.M. (2016). The formation and function of the cardiac conduction system. *Development (Cambridge, England)* 143, 197–210.

Wessels, A., Markman, M.W., Vermeulen, J.L., Anderson, R.H., Moorman, A.F., and Lamers, W.H. (1996). The development of the atrioventricular junction in the human heart. *Circ. Res.* 78, 110–117.

Wiedermann, C.J., Becker, A.E., Hopferwieser, T., Mühlberger, V., and Knapp, E. (1987). Sudden death in a young competitive athlete with Wolff-Parkinson-White syndrome. *Eur. Heart J.* 8, 651–655.

Zaidi, S., Choi, M., Wakimoto, H., Ma, L., Jiang, J., Overton, J.D., Romano-Adesman, A., Bjornson, R.D., Breitbart, R.E., Brown, K.K., et al. (2013). De novo mutations in histone modifying genes in congenital heart disease. *Nature* 498, 220–223.

Zhou, B., von Gise, A., Ma, Q., Hu, Y.W., and Pu, W.T. (2010). Genetic fate mapping demonstrates contribution of epicardium-derived cells to the annulus fibrosus of the mammalian heart. *Dev. Biol.* 338, 251–261.