

Afib triggered by a cell that resembles a pigment-producing skin cell

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The source and mechanisms underlying the abnormal heart beats that initiate atrial fibrillation (Afib), the most common type of abnormal heart beat, have not been well determined. However, a group of researchers at the University of Pennsylvania, Philadelphia, has now identified a population of cells that are like pigment producing cells in the skin (melanocytes) in the atria of the heart and pulmonary veins of mice and humans and uncovered evidence in mice that these cells contribute to Afib.

Initial analysis by the group, led by Vickas Patel and Jonathan Epstein, identified a population of cells in the atrium and [pulmonary veins](#) of mice and humans that expressed the protein DCT, which is involved in making the skin pigment [melanin](#).

Further work showed that Dct-expressing cells in the mouse heart were distinct from both [heart muscle cells](#) and skin melanocytes, although they could conduct electrical currents, which are important for coordinated contraction of the heart.

Adult mice lacking Dct were susceptible to induced and spontaneous Afib and the melanocyte-like cells in their heart exhibited abnormal conduction of electrical currents in vitro. As mice lacking both melanocyte-like cells in the heart and Dct failed to develop either induced or spontaneous Afib, the authors suggest that dysfunctional melanocyte-like cells in the heart may be a trigger of Afib in humans.

More information: View this article at: www.jci.org/articles/view/3910...b77e366704c2753e982f

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