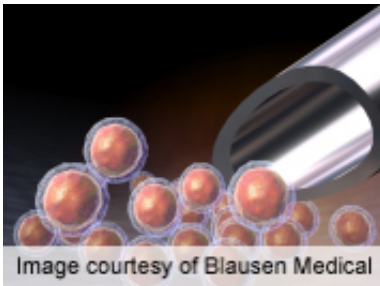


Distinct chromatin patterns linked to heart development

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Distinct chromatin patterns accompany the development of heart cells from embryonic cells, providing a blueprint that could help identify the causes of congenital heart disease, according to a study published online Sept. 13 in *Cell*.

(HealthDay)—Distinct chromatin patterns accompany the development of heart cells from embryonic cells, providing a blueprint that could help identify the causes of congenital heart disease, according to a study published online Sept. 13 in *Cell*.

Joseph A. Wamstad, Ph.D., from the Massachusetts Institute of Technology in Cambridge, and colleagues analyzed the epigenetic changes that occur during the directed differentiation of mouse [embryonic stem cells](#) into cardiomyocytes and used chromatin marks to identify patterns associated with stage-specific development.

The researchers found that distinct chromatin patterns were associated

with stage-specific gene expression and could predict sets of functionally related genes, some of which were associated with human disease. In addition, a novel preactivation chromatin pattern was found at the promoters of specific cardiac genes involved in cardiac development and function. They also identified stage-specific distal enhancers that predicted novel transcriptional regulatory networks during differentiation as well as potential new regulators of cardiac development.

"Together, these findings form a basis for understanding developmentally regulated chromatin transitions during lineage commitment and the molecular etiology of [congenital heart disease](#)," Wamstad and colleagues conclude.

One author is a scientific founder of iPierian and is on the scientific advisory boards of iPierian and RegeneRx Pharmaceuticals.

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