A Method to Direct Differentiation of Pluripotent Stem Cells into Functional Heart Muscle

Abstract

The present invention is directed to a method for producing bioengineered heart muscle (BHM) from pluripotent stem cells, generally comprising the steps of inducing mesoderm differentiation, cardiac differentiation, and cardiac maturation by directed tissue formation. The method is a robust, serum-free and reproducible way to produce BHM for multiple applications, and is applicable to multiple pluripotent stem cell lines. The present invention is also directed to the BHM produced by the method disclosed herein, as well as to uses of said BHM in pharmacologic and toxicity screenings, and its use in medicine.

(Figure 1)