

## News Tips for

### **From the American Heart Association's Basic Cardiovascular Sciences Conference 2009 July 20-23, Lake Las Vegas, Nev.**

**Monday, July 20, 2009**

**EMBARGO RELEASE TIME: 4 p.m. PT/7 p.m. ET**

#### **Abstract P79 – “3-D” matrix of beating cells may repair ailing heart**

Arizona researchers have successfully constructed and implanted a three-dimensional (3-D) “scaffold” of living, beating heart muscle cells to repair diseased and failing hearts in laboratory animals.

The researchers have implanted these contracting scaffolds of cultured cardiomyocytes (heart muscle cells) from neonatal rats onto the hearts of adult rats with congestive heart failure. High-density seedings of this cellular matrix scaffold (3-D fibroblast constructs, or 3DFC) show synchronized and spontaneous contractions of the entire scaffold after 48 hours in culture, researchers said.

The 3DFC contractions increased in strength from 48 hours to five days. At five days, the scaffolds of living cells continued to contract in a consistent rhythmic and directional manner at an average rate of 71 beats per minute (bpm). The seeded scaffolds can be electrically paced at up to 240 bpm.

“These findings show that isolated cardiomyocytes can be seeded and co-cultured onto a biodegradable 3-dimensional scaffold in a manner allowing cellular survival, communication and electrical coupling,” said Jordan Lancaster, a predoctoral fellow, noting that the researchers’ claims are supported by the observation that the cellular scaffolds beat spontaneously with no outside electrical stimulation in a rhythmic fashion.

“This newly formed neonatal cardiomyocyte 3DFC scaffold is a new and unique cell delivery system to potentially treat infarcted hearts.”

**Jordan Lancaster, B.S., Southern Arizona VA Health Care System, Tucson, Ariz.**

***Actual presentation time is 7:05 p.m. PT/10:05 p.m. ET, Monday, July 21, 2009.***

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