

october, 2016

## **Spontaneously contracting fish cell aggregates, use thereof and method for the production thereof**

**Key words:** cardiac safety pharmacology, organotypic cardiac model

For the development of new drugs, cardiac safety profiling is mandatory. Novel substances may block cardiac ion channels, which causes life threatening arrhythmias. Currently cardiac side effects are either analyzed in cell lines or animals. During the last years organotypic cardiac model systems became more popular since they combine advantages such as a high reproducibility and high complexity. However, the production of organotypic tissues is usually costly.

### **The Invention**

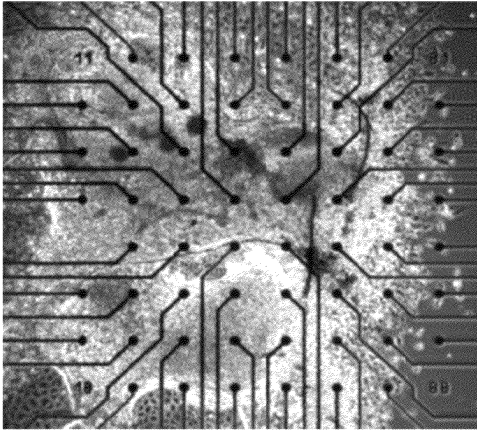
The invention relates to an in vitro method for producing spontaneously contracting fish cell aggregates, to the fish cell aggregates obtained thereby, and to the use thereof, in particular for testing biological active substances and pharmaceuticals. The in vitro method according to the invention for producing spontaneously contracting fish cell aggregates comprises mechanical comminution and/or partial enzymatic digestion of fish embryos or fish larvae; transfer of the comminuted and/or partially digested fish tissue into an enzyme-free medium and removing the supernatant by centrifuging to obtain a cell pellet; resuspension of the cell pellet in a cell culture medium and cultivation of the cells, with the medium being changed at least once, until spontaneously contracting cell aggregates form. Any fish species is in principle suitable as a source for the fish embryos or fish larvae used according to the invention, preferably those from Osteichthyes, in particular the species of Teleostei.

### **Market potential**

- Pharmacological substance testing for applications in human and veterinary medicine
- High throughput testing in pharmacological research

### **State of Development**

It has been demonstrated that the aggregates are suitable for pharmacological measurements. Thus, the pro-arrhythmic substances Dofetilide and Terfenadine led to a significant increase in field potential duration, which is a known effect in human cardiac physiology.

**Branch**

Pharma (human, veterinary)

**Patent situation**

Patent granted (US)

**Offer**

Co-operation, Contract research, License, Sale

**Contact**

Dr. Matthias Brandenburger

Phone: +49 451 384448 17

[matthias.brandenburger@emb.fraunhofer.de](mailto:matthias.brandenburger@emb.fraunhofer.de)