A New Glass Chip System Acquiring Electric Activity And Physiological Parameters of Stem Cell Derived Cells.


Abstract: The EU chemical policy REACH regulates the registration, evaluation and authorization of chemicals. Investigations on the effects of neurotoxic and developmental-neurotoxic substances are required by European and US-American test guidelines. However, until now these tests are based on animal experiments contradicting society claims to abolish animal experiments and to implement the 3R-principle. The acquisition of electrophysiological signals of cultivated nerve or muscle cells differentiated from stem cells on a glass chip is a novel method for the reduction of animal experiments. Our Modular Glass Chip System (MOGS) has the potential to become a compact and versatile test system for producers of pharmaceutical, HCS applications as well as bioanalytical substances.