"Fully Robotic Drug Screening and Drug Testing System"

VCU #12-113

Applications

- High Throughput drug screening
- Drug testing
- Pharmaceutical service

Advantages

- Fully robotic system
- Reduced cost of drug development
- Elimination of toxicity in patients during clinical trials
- *In vitro* mimicking human physiology

Inventors

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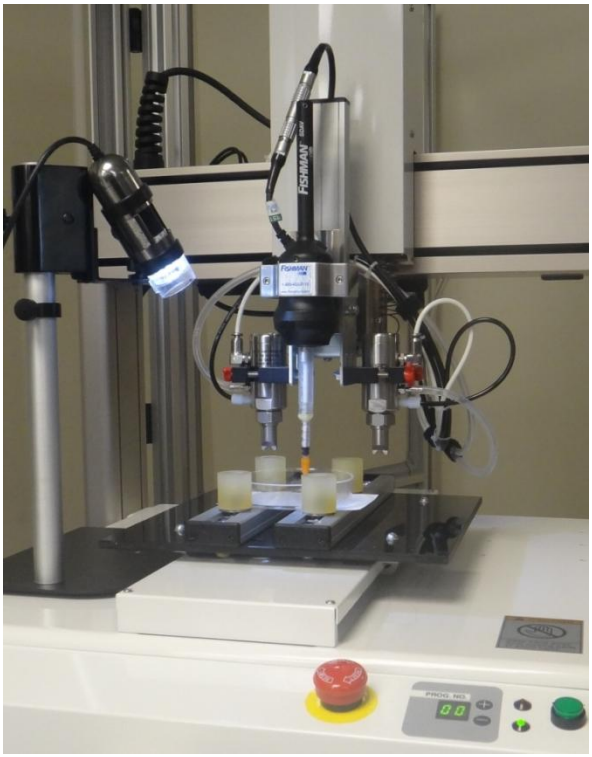
Market Need

Due to the scientific advancements, drug synthesis and development can be quite fast nowadays. However, the cost of bringing new drug to the market, especially taking it through the clinical trials, is very high and can rich over $1.3 billion per drug. Majority of the cost is actually due to the trial failure, which rate is extremely high, with over 90% of drugs failing the clinical trials. Although many drugs have been tested on animals and passed the initial tests, most of them still failed at clinical trial phase.



Technology Summary

Dr. Wen and colleagues have developed the low cost *in vitro* platform technology to screen and test new drugs, in terms of functionality and toxicity, using 3D human microtissues to appropriately reflect whole human body physiology. It minimizes or eliminates sources of human errors, which are conventionally present for known testing methods. The goal is to stop the failure drugs from reaching clinical trial phase, which will reduce the cost of new drugs development and future drug prices. This invention can also help to eliminate drug toxicity issues during the trials. By implementing this novel *in vitro* human tissue testing system, it is expected to reduce approximately 90% of drug development costs.

Technology Status

Patent pending: U.S. and foreign rights available.

This technology is available for licensing to industry for further development and commercialization.