

August 15, 2013

Codex BioSolutions, Inc. announces today the receipt of a SBIR Phase I contract for \$158,510 from NIH to fund the development of a high throughput assay that measures chemical toxicity. The contract is titled “Novel In Vitro Dye Based High-Throughput Toxicity Assay”.

The main goal of the SBIR project is to construct a cell-based high throughput assay that measures chemical toxicity using a novel dye, m-MPI. The dye was engineered by Codex to overcome many of the drawbacks of current dyes used to measure mitochondrial membrane potential.

Mitochondrial membrane potential (MMP) assays are a valuable tool in evaluating drug toxicity in vitro, as they decrease the cost of toxicity screening and improve patient safety by screening out drugs with potential toxicity before they are tested on humans. Assays used currently are no ideal for this because the fluorescent cationic lipids used in these assays are not amenable to sensitive high throughput assays on all cell types, especially primary cells. Our newly developed fluorescent dye, m-MPI, will be used to develop a high throughput commercial assay that can be used with many primary and established cell lines.

The parent dye, JC-1, which has been used for the purposes of measuring mitochondrial membrane potential previously, is difficult to use because it has very low water solubility. Our dye, m-MPI has increased solubility, allowing easy quantitative assessment of MMP status simply by calculating the ratio of red/green fluorescence. m-MPI can also be used with cells that do not work with JC-1 (like primary cells) due to its increased sensitivity. Codex believes that the assay we develop during this project, funded by NIH, will more accurately assess hazards in a shorter time and with less cost. Such assays could find utility in chemical assessment and risk management after validation.

Dr. Jianming Lu will serve as the principal investigator of the project.