HEPG2-FLUC-GLUC AND HEPG2-FLUC-SEAP CELL LINES

Technology Summary

Drug-induced liver injury is the leading cause of acute liver failure in the United States causing significant morbidity and mortality in those that are affected. The assessment of endoplasmic reticulum (ER) stress levels is an important factor in monitoring potential liver toxicities and diseases.

FDA researchers have establishment two new cells lines (HepG2-Fluc-Gluc and HepG2-Fluc-Seap) to monitor ER stress levels quantitatively and efficiently, using Gaussia luciferase (Gluc) and secreted alkaline phosphatase (SEAP) as ER stress reporters. Validations studies have been completed using microarray and other biochemical and molecular analyses.

Potential Commercial Applications

- Drug evaluations for drug-induced liver injury
- Research tool

Competitive Advantages

- Novel in vitro system to study drug-induced liver injury

Development Stage:

- Established cell lines, HepG2-Fluc-Gluc and HepG2-Fluc-Seap

Inventors:

- Lei Guo, Si Chen

Publications:

- Chen, S. et. al. Sertraline induces endoplasmic reticulum stress in hepatic cells. Toxicology. 2014 Aug 1;322:78-88. PMID: 24865413

Product Area: in vitro system, cell line, research materials

FDA Reference No: E-2020-010

Licensing Contact:

FDA Technology Transfer Program
Email: FDAInventionlicensing@fda.hhs.gov