Novel approach for deriving liver cells from stem cells

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Human liver cells are perishable, expensive and are in short supply. These cells are highly desirable for drug screening in pharmaceutical industry – a market of ~1.5 billion. We developed a novel process for transforming stem cells into human liver cells, and will provide these cells to pharmaceutical industry for drug screening and toxicology testing.

Stem cells have a bright future as a source of specialized cells such pancreatic islets or liver cells. However, at the present time stem cell cultures require large amounts of very expensive reagents and are not really scalable to where large amounts of cells can be produced. We have developed a biomaterial of proprietary composition that can be coated onto culture dishes. Stem cells cultured in these dishes receive signals from the biomaterial coating and become transformed into liver-like cells. The use of biomaterial coatings allows to cut the cost of stem cell culture by 200 times. In addition to offering a less expensive way of culturing stem cells our strategy will be used for deriving liver cells which are valuable as liver surrogates for toxicology and pharmacology screening.