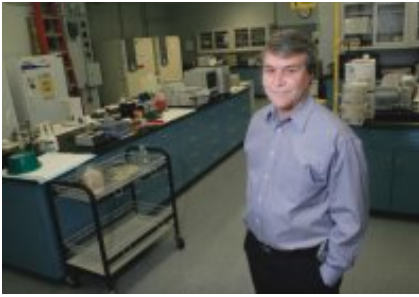


Maryland's stem cell industry budding



Karl B. Hille, The Examiner
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BALTIMORE -

Maryland companies and private researchers are repairing spine damage, rebuilding torn cartilage and working on cures for autoimmune diseases such as Crohn's disease and type 1 diabetes.

(Arianne Starnes/Baltimore Examiner)

Alan K. Smith, president and CEO of Cognate Bioservices Inc. stands in the human cell-culture lab on Friday in Halethorpe.

They are working largely on a patchwork of state, private and minimal federal funds. But with the suggestion of more funding coming from Congress, many feel their industry is about to open up.

"It's cutting edge. It's fascinating science, and it has tremendous potential to help people, all of which makes for stimulating work," said Alan Smith, president of Cognate Bioservices Inc. in

Baltimore.

There are at least five businesses in Maryland working on the next generation of medicine — the miracle cures only dreamed about a decade ago. The Examiner talked with a few of them.

Healing the nervous system

Theradigm is a Baltimore portfolio company of Toucan Capital Fund II, working on adult cell-based therapies for treatment of central nervous system disorders since 2000.

The company uses neural stem cells and bone marrow stromal cells, as well as cultures derived from fatty tissue and umbilical cord "jelly." It hopes to use those cells to heal damaged tissue from stroke or spinal cord injuries, as well as multiple sclerosis.

Theradigm provides cell cultures to other research organizations to pay the bills, said Smita Savant, vice president for research, "but mainly our focus is to go to clinical trials with the number of cell types we are using."

The neural stem cells are "uncommitted progenitor cells" from the developing or adult nervous system, which can give rise to multiple specialized cells of the central nervous system.

Theradigm is working to make new human stem cell lines and on methods to grow cells faster and get numbers that are clinically useful.

In addition to Toucan funding, Theradigm relies on Maryland Industrial Partnership and federal Small Business Innovative Research grants for a total of \$500,000 in grant funding.

It employs four researcher/scientists and works closely with its sister company, Cognate BioServices.

Growing the stem cell lines

Cognate BioServices, Theradigm's sister company, is a contract manufacturer of cell-based products. Formed in 2002, it provides cell cultures, consultation and research and development services to other biotechnology companies.

Cognate isolates bone marrow stem cell samples and expands them in large numbers for clinical studies. Each culture is grown in a special glucose solution, clinging to the sides of polycarbonate bottles until there are enough to package.

In Baltimore, 10 researchers and technicians develop the processes and technology to isolate and expand stem cell cultures more efficiently and more effectively, Smith said. In California, the company's manufacturing facility employs 17 people and produces large-batch cultures — 100 million cells or more — for clinical trials.

While Cognate is not directly involved in research grant applications with the Stem Cell Commission, its work will likely find its way into laboratories in Maryland as more and more clinical applications are found for stem cells.

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