

## BioBusiness Asia 2009

Company Name	NuPotential, Inc.		
Presenter	Chuck Oehler	Title	President
Address	Louisiana Emerging Technology Center, LSU Campus Bldg #340, E. Parker Blvd., Baton Rouge, LA 70803		
Website	www.nupotentialinc.com		
No. of employee	8	Year of foundation	2005
Company Categories	<input type="checkbox"/> Novel Therapeutics <input type="checkbox"/> Genomics <input type="checkbox"/> Pharmaceuticals <input type="checkbox"/> R&D Service <input type="checkbox"/> Medical Devices      Other <u>cell based assay research technologies for drug/tox screening</u>		
Paid-in Capital	Closed series A round of venture capital, institutional funding and angel funding: 11/07. (also secured \$.94 M. USD from US National Institutes of Health grant funds)		
Company Stage	<input type="checkbox"/> Seed      Start up <input type="checkbox"/> Expansion <input type="checkbox"/> Mezzanine		
Company Overview	<p>NuPotential, Inc. has developed a breakthrough approach for cell reprogramming to create new progenitor cells required for blockbuster cell therapy treatments for such degenerative afflictions as diabetes, Alzheimer's Disease, and others. NuPotential's technology stands apart from existing competing technologies by enabling highly efficient modification of a patient's own cells to become pluripotent, or able to differentiate into any cell type via small molecule agents. NuPotential accomplishes this transformation without using known cancer-causing delivery systems or rejection-prone exogenous cells. As part of this value proposition, NuPotential is developing a licensable new class of proprietary compounds to impact the targets that induce reprogramming. NuPotential will monetize this technology through alliances with major pharmaceutical and cell therapy firms that have a strong need for alternative, renewable sources of progenitor cells for cell therapy development. The company also is acquiring novel cell differentiation technology to provide a full value model for strategic alliance partners, and to develop its own therapeutics. The complete model also will be licensed for research tools development, including cell-based assays for predictive toxicology, small molecule screening and related drug development applications.</p>		

NuPotential began scientific operations in December, 2004 to commercialize cell reprogramming-based research products and cell therapy development technologies developed under the leadership of Dr. Kenneth Eilertsen. Milestones achieved include:

Milestone	Completed
Secured ~\$1M. from NIH NCRR (Grant # 1 R44 RR019233-01) in SBIR FAST TRACK funding to complete a molecular characterization of donor cells as a second major component of a predictive model of cell reprogramming.	√
Established scientific operations in state-of-the-art cell biology and genomics/proteomics research facilities in the Pennington Biomedical Research Center in Baton Rouge, LA, and, subsequently, the Louisiana Emerging Technology Center, also in Baton Rouge.	√
Established a new epigenetics-based approach to cell reprogramming and differentiation that provides freedom to operate, and filed for broad patent coverage of this technology.	√
Dedifferentiated somatic cells into cells with similar morphology to published embryonic stem cells, and confirmed functions impacting reprogramming.	√
Differentiated the reprogrammed cells along adipose fat and bone lineages.	√
Dedifferentiated a terminally differentiated primary cell line and induced to re-enter the cell cycle.	√
Established infrastructure and expertise for intellectual property protection, regulatory affairs management, personnel administration and finance/accounting.	√
Developed monoclonal antibodies with specificity for epigenetic targets identified at NuPotential as being relevant to reprogramming pathways and useful for use in protein microarrays (a disclosure describing this potential product has been filed at NuPotential).	√
Closed on Series A venture capital round to advance proprietary research and development.	√
Triggered first milestone payment of \$1M. based on success in validating reprogramming platform <i>in vitro</i> .	√

Company History

<p>Main Products/ Service &amp; Niche of Products/ Service</p>	<p>NuPotential will monetize its technology through licensing/sale of progenitor cells and/or reprogramming compounds for use in therapeutic development, and as part of actual therapies. Revenues will derive from:</p> <ol style="list-style-type: none"> <li>1) <u>Collaborative Drug Development.</u> License fees, co-development fees, milestone payments, royalties, licensing/sales of proprietary compounds (or cells themselves) for partners' use in producing progenitor cells for specific therapeutic purposes – on a repetitive basis</li> <li>2) <u>Proprietary Drug Development.</u> Internal development of cell therapies by NuPotential using proprietary cell reprogramming platform and acquired proprietary cell differentiation technologies.</li> <li>3) <u>Research Tools Licenses.</u> Up-front payments and royalties for use of the platform in producing pluripotent cell lines that can be differentiated into specific lineages, for drug screening applications.</li> </ol> <p>To provide a full value model for partners, and to develop its own internal therapeutics development program, the company is proactively sourcing and acquiring novel cell differentiation technology.</p> <p>The complete technology model also will be licensed for research tools development, including cell-based assays for predictive toxicology, small molecule screening and related drug development applications, and at least one company with an existing major pharma customer in this space has expressed interest in exploring an alliance with NuPotential for access to its reprogramming technology.</p>
<p>Market Potentials</p>	<p>The overall cell therapy market is expected to grow dramatically from \$26 B. in 2005 to \$96 B. by 2015. NuPotential will occupy one of the fastest growing segments of that market—the regenerative medicine market, which is projected to grow 900-fold in the same time period to \$8.5 B.</p>
<p>Company Core Competence or Competitive Advantage</p>	<p>NuPotential has several pending patents surrounding its proprietary cell reprogramming platform, and is expanding its patent coverage with additional applications related to new classes of targets and compounds relevant to reprogramming. Briefly, NuPotential's patent estate covers methods to regulate the methylation status of various cellular structures such as DNA, histones, and chromatin, and thereby direct cellular reprogramming. (Chuck – there is a German group (DKFZ) who seems to have discovered RG108, worth a patent/license check there) The USPTO gave a positive initial response to NuPotential's responses to the first office actions, and an analysis by independent legal counsel concluded that NuPotential has freedom to operate.</p> <p>NuPotential is further expanding its intellectual property estate by aggressively pursuing rights to novel differentiation technologies for specific clinical cell therapy applications, and has a strategic partnership with the Pennington Biomedical Research Center of the Louisiana State University System that provides exclusive rights to new multipotent cells and self renewal technologies under development at the institution.</p>
<p>Partnering Objectives</p>	<p>NuPotential has four key partnering objectives:</p> <ol style="list-style-type: none"> <li>1) Identify and secure new sources of investment funding.</li> <li>2) Identify and secure new sources of technology for therapeutic development, including proprietary small molecules or related technologies for more efficient differentiation of cells.</li> <li>3) Identify collaborators for joint R&amp;D efforts, particularly those with sufficient scientific merit to qualify for grant funding or corporate alliances.</li> <li>4) Identify overseas sales opportunities, including key accounts, and distributors.</li> </ol>