# **Teaser Memorandum**

MedExGen, Inc.

# **Executive Summary**

MedExGen, founded in 2000, is a biotechnology company that aims to discover and develop, through comprehensive methods and techniques, new proprietary platform technologies, which will greatly impact and positively improve the lives of everyday people. The eventual end commercialization of our technologies are on the role of our alliances. We continuously develop our internal strengths and capabilities while reaching out to wide and solid international partnerships and collaborations.

MedExGen is a protein therapeutics R & D company with validated proprietary technology platforms to produce the highest quality, high end protein therapeutics with huge market capabilities. By using these platforms MedExGen has finished developments of next generation Block-Busters, Tetravalent Etanercept, Tetravalent Abatacept, Ultra-High Affinity EPO and Ultra-High Affinity TPO. While trying to license out these products to big pharmas MedExGen is going to run its own business for long acting antibody conversion custom service to various pharmas and biotech companies developing antibody type therapeutics in their developmental pipelines.

#### **Boards of Director**

Yong-Hoon Chung M.D., Ph.D.,	President /CEO, President Professor and Chairman, Department of Microbiology and Immunology Hanyang University College of Medicine Former Board of Director Boryung Pharmaceutical Co. Former Research Fellow Memorial Sloan-Kettering Cancer Center Doctor of the year 1982 Han-II Hospital
Yul-Hee Cho M.D., Ph.D.	Director, MedExGen Inc.     Associate Professor and Chairman,     Department of Genetics     Hanyang University College of Medicine
Shin-Jae Kang M.D., Ph.D.	<ul> <li>Director, MedExGen Inc.</li> <li>Director, Samsung Corp.</li> <li>Former Chairman, Internal Medicine Jam-S</li> </ul>
Woo-Yong Lee M.D.	Director, MedExGen Inc.     Chief Surgeon, Plastic Surgery, Hanyang University Hospital

# **Key Technology Highlights**

□ Top two BioPharmaceuticals with Big Safety Concerns:
 Our Technologies provide Solutions

- A. TNF Inhibitor (Amgen, J&J, Abott, etc): Treatment with TNF blockers and mortality risk in patients with rheumatoid arthritis – Elisabet Lindqvist, Tore Saxne and Pierre Gebor, Ann Rheum Dis 2007;66;670-675
- B. EPO (Amgen, Wyeth, J&J, etc): Simulating EPO Anxiety With FDA imposing black box warnings on erythropoiesis-stimulating agents, physicians expect to continue using the drugs within the confines of labeled hemoglobin levels even as they will be looking for data showing actual survival endpoints for Aranesp and other EPOs. March 12, 2007 BioCentury

## **Company Description:**

CEO: Yong-Hoon Chung

Established: May 2000

 Funding to Date: US \$ 1.2 Million in A round, US\$ 5 Million expected
 2<sup>nd</sup> half 2007

Financing Sought: US\$ 5 M

 Current Investors: Individuals and Hanyang University

# **Company History:**

2000.5	Company established		
2001.7	Developed Potency Technology		
2003.7	Developed Efficacy Technology		
2004. 2	Developed Method of Treatment of Transplantation		
2004.5	Developed Long-acting forms of Antibody derivatives		
2004.6	The presenting company of Bio2004 Annual Convention at San Francisco		
2004.10	The Presenting company of BioContact Quebec		
2004.11	The Presenting company of Bio-Europe, Cologue, Germany		
2005.3	The Presenting company of Sach-Broomberg Forum 2005		
2006.2	Invited for presenting at BIO CEO&Investor conference, NY		
2006.3	Invited for presenting at BIO- Square. Geneva, Switzerland		
2006.3	MedExGen Inc finished establishment of four proprietary platform technologies		
2006.4	Invited for presenting at BIO- Annual International convention, Chicago		
2007.5	MedExGen Inc has granted US patent of Tetravalent Ig technologies		

#### □ Products

Name	Phase	Indication	Milestone
Long-Acting Antibody	Custom Service	Antibody Therapeutics	Revenues from Antibody Pharmas
Tetravalent Etanercept	Pre-clinical	Inflammation	Successful Clinical phase II
Ultra High Affinity EPO	Pre-clinical	Anemia	Successful Clinical phase II

### □ Patents Registered

Title of Registered Invention	Country	Date	Number
	Korea	2004.1.30	10-0418329
	us	2007.6.12	7229962
Tetravalent Immunoadhesion a)	EU	2005.5.4	EP1362062
	Australia	2004.1.27	20022313952
	China 2007.1.3 Korea 2006.9.29	CN1524092A	
	Korea	2006.9.29	0632985
High Affinity Cytokines <sup>b)</sup>	Australia	2007.4.5	2004259314
	South Africa	2007.2.28	2006/00502
<b>Pharmaceutical Composition for</b>	Korea	2006.12.8	10-0650850
Immunological Disorders <sup>a)</sup>	Australia	2007.3.5	2005203104
Tetravalent TNF Inhibitors <sup>a)</sup>	Korea	2004.10.12	10-0453877
Chroscylated immunoglobuling)	Korea	2005.12.5	10-0545720
Glycosylated immunoglobulin <sup>a)</sup>	Singapore	2007.9.28	129177

a) increased potency technology, b) enhanced efficacy technology



# **Technology Overview**

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# Benefits of using Tetravalent Etanerceptal

- 1. Long-acting form prolong Administration Interval
- 2. Preferential Localization at Inflammatory Tissue
  - increases Therapeutic Efficacy,
  - reduces Administration Dose and Frequency, General Side-Effects,
    - & Neutralizing Antibody Induction
- 3. Favorable Antigenicity findings include
  - weaker binding by polyclonal antihuman IgG antibodies
  - increased local accumulations in the arthritic joints
  - pharmcokinetics show decreased circulating Etanercept
  - Lowered Neutralizing antibody in arthritic mice
- a) increased potency technology



# **Company Overview**

#### MedExGen's business strategies will be composed of following three approaches:

- Using its proprietary Long-Acting Antibody Technology, the company builds its own business setup in USA.
- MedExGen collaborates with pharmaceutical and biotechnology companies to create next generation therapeutics using its proprietary technologies.
- MedExGen is flexible to generate products for out-licensing at different research and development stages from its four platforms.

Collaborative partnerships and out-licensing provide upfront and milestone payments, and generate downstream revenue through product royalties. This approach maximizes the return from the Company's know-how and technical capability. By offering Long-Acting Antibody conversion service to partners in addition to developing its own product pipeline, MedExGen builds significant corporate value and reduces the financial risk as it moves forward.

#### **Proprietary Programs**

#### 1. Tetravalent Ig-fusion Therapeutics

- Introducing the power of Ig-fusion immune inhibitors with four binding units
- One more Favorable Homologous Addition of Binding Unit

#### 2. Broad MHC II inhibitor Therapeutics

- The most powerful immunological inhibitor
- Toxicity of Original Compound proved Safety

#### 3. Long-Acting Antibody Therapeutics

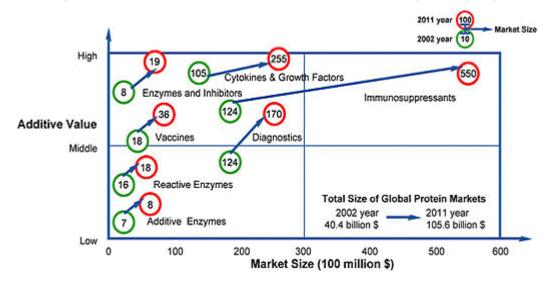
- Quick conversion method for prolongation of in vivo half life of antibodies
- Simple Adoption of N-Glycosylations from Other Igs.

#### 4. High-Affinity Cytokine Therapeutics

- Quickly applicable to improve proven cytokine therapeutics
- Simple Adoption of a Natural Variation in Human Body

#### **Therapeutic Proteins**

The two proteins are expecting to lead global biopharmaceutical market. Those are Immunosuppressants and Cell stimulating cytokines &growth factors Our technologies are targeting these two proteins by using our novel potency and efficacy technologies. Functional Insufficiency of current therapeutic protein is the major cause of neutralizing antibody and the answer for this serious problem is in functional improvement of the protein drugs. There can be two ways of protein functional improvement, either by potency or efficacy technology. If our glycosylation technology is combined with either one of these technologies the therapeutic protein can be an even more powerful and longer lasting drug.



Our novel PROTEIN ENGINEERING technologies dramatically surpass the POTENCY and EFFICACY of today's recombinant protein pharmaceuticals. Our technology of improving potency is good for blocking type proteins useful in immunological,

inflammatory and oncological diseases or conditions. And another technology of improving efficacy is good for stimulating type cytokine proteins useful in hematological diseases or conditions. Once FDA approved, the various pharmaceutical applications of our technologies will dominate the immunosuppressive hematological therapeutics marketplace. chemicals, food, pharmaceuticals, industrial fibers, feed, trade and environment. The Company's food business is characterized by its sugar operations, consistently ranking second within the domestic market with approximately 30% market share. Samyang's sugar revenue accounted for 21.5% of total 2005 revenue.

#### Potency technology

Our potency technology is developed for cellular activity-blocking proteins, currently known as Immunoadhesin type therapeutics such as TNF Receptors types one and two, CTLA4, LAG3, and CD2 of which extracellular part fused to Fc portion of immunoglobulin. In our view Immunoadhesin is better than Antibody type drug.

For potency, our Concatameric Immunoadhesion technology dramatically increases the binding avidity of immunoadhesins to their targets more than 20 times, compared to known immunoadhesion technologies and pharmaceuticals. Fused to the immunoglobulin constant region, our unique serial duplicated soluble receptor methods and techniques have been comprehensively tested on various types of soluble receptors, including TNFR-1, TNFR-2, CD2, or CTLA-4. Remarkably increased blockade of cytokines or counterreceptors extremely decreases the end-user's symptomatic ailments and drug administrations.

Potency is not just doubling of functional unit. Doubling avidity increase therapeutic potency enormousely. Here Boxer with 4 arms defeats boxer with 2 arms when the boxing is in the beginning of round 1 everytime. It never continues to round 6 (I mean half of current 12 rounds-matches).

#### **Efficacy technology**

Our Efficacy Technology is for the cell activity stimulating type proteins here protein belongs to 4-Helix-bundle cytokine family, such as EPO, TPO, and G-CSF

We have spectacularly enhanced the binding force of cytokines to each of their receptors more than 100 times, especially four helix bundle type cytokines, compared to original type cytokines currently on market. By intensifying the binding affinity of the erythropoietin, thrombopoietin, and G-CSF, a strong lock on the cytokine sends an enormously powerful signal to the targeted area in the human body, which results in a greater cellular responses. For an application example, this powerful signal is sent to bone marrow, which results in: a greater production red blood cells, white blood cells, and platelets; a lesser neutralization of antibodies; and an overall greater healing effect. There is no known or available technology that is similar to our efficacy technology.

This cartoon explains working principle of our efficacy technology. Second from the left is the type of epo on current market, though the chance of raising Neutralizing Antibody is very low this explains why frequent end-users are developing antibody against Epo. In this case epo binds to its receptor submaximally then the signal triggered from the receptor of this binding isn't enough. So end user who is not satisfied with this condititon takes more epo which does not bind to the receptors effectively. That is increasing more of idling EPOs in the body which stimulate immune system to produce neutralizing antibody.

More glycosylation in this status weakens the binding and make epo less antigenic and stay longer in circulation. This means more entry of idling drug. But if our efficacy technology is applied to this wild type recombinant it binds to the receptor with hiaffinity and triggers maximal signal and remarkably improved functional efficacy. This case glycosylation technology is not required for the end-user's satisfaction. But if glycosylation is added it could be better.

# **Contact Point**

KHIDI (Korea Health Industry Development Institute) is currently seeking potential corporate partners to fund clinical development or investors who are interested in this therapeutic area and an equity interest in BioNutrigen. Interested parties should contact below for additional information.

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