Announcement of Industrial/Academic Four-Party Joint R&D Project on Novel Nucleic Acid Hybrid Decoy for the Treatment of Intractable Inflammatory Diseases

AnGes MG, Inc. (AnGes MG) announces the launch of a joint R&D project on new drugs for the treatment of intractable inflammatory diseases, for which there is a strong clinical requirement to improve the intractable condition, involving four industrial and academic parties. The four parities are: Gene Design Inc. (Gene Design), Hosokawa Powder Technology Research Institute (an R&D subsidiary of Hosokawa Micron Corporation; hereinafter "Hosokawa"), Osaka University Graduate School of Medicine (Osaka University) and AnGes MG.

This joint R&D project includes establishing methods for the large-scale synthesis of novel nucleic acid hybrid decoys having superior features over conventional nucleic acid medicines; evaluating the efficacy of the synthesized decoys using animal models of intractable inflammatory diseases; developing drug delivery system (DDS) technology to encapsulate the decoys in PLGA nano-particles and researching the formulation of new pharmaceutical products made of these decoys. After the appropriate formulation is determined, the parties will engage in safety studies, pharmacokinetic studies and so forth.

This joint R&D project has been adopted as one of the regional innovative R&D projects in 2008 by the Kansai Bureau of Economy, Trade and Industry. The four parties involved in this program will receive a subsidy totalling 150 million yen by the end of March 2010.

R&D Project Outline - Novel nucleic acid hybrid decoy -

The hybrid decoys are next-generation NF- κ B decoys with improved in vivo stability developed by the technologies cultivated by AnGes and Gene Design during the development of conventional double-stranded decoys and ribbon type decoys (improved decoys with terminal domains modified in the form of a circle).

• The superiority of novel nucleic acid hybrid decoys over conventional double-stranded decoys

1) The inhibitory activity against NF-κB protein is about 10 to 100 times higher than conventional double-stranded decoys. Excellent in vivo stability is manifested through

improved resistance to nucleolytic enzyme in plasma.

2) Adoption of the new structure simplifies the manufacturing processes, leading to cost reduction and easier production scale-up.

3) Improved in vivo stability enables the development of drugs that are suitable for systemic administration.

Role assignment of the four parties

Outcomes of each party's past research:

• Gene Design attempted to resolve problems with conventional ribbon type decoys, such as the complex production processes and higher production costs compared to double-stranded decoys. By researching basic molecular structures, Gene Design has discovered a new structure that allows simpler production while retaining its in vivo stability, its major advantage.

• AnGes found a sequence that can further improve the inhibitory activity of conventional double-stranded NF-κB decoys.

• Hosokawa succeeded in encapsulating the drugs in nanoparticles (200 nanometer biocompatible PLGA macromolecule) and established DDS technology making use of the absorbing and slow-release properties of PLGA nano-composites.

Each party's role in the joint R&D project:

- Gene Design
- Production of hybrid decoys for research use and their supply to AnGes, Hosokawa and Osaka University.
- Development of technology for large-scale production of hybrid decoys making use of its GMP-compatible production facilities scheduled to launch operation in 2009.
- Hosokawa
- Research on the formulation of DDS for hybrid decoys to improve the efficiency of drug uptake into tissue and cells.
- AnGes MG and Osaka University
- Evaluation of the efficacy of hybrid decoys using animal models of inflammatory diseases. In addition, safety evaluation, pharmacokinetic study, etc., are also planned.

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Company profiles

Company name	: Gene Design Inc.
Headquarters	: 7-7-20 Saito-asagi, Ibaraki, Osaka
Representative	: President and CEO, Kazuhiko Yuyama
Established	: December 2000
Capital	: 191 million yen
Number of employees	: 23 (As of August 2008)
Sales	: 193 million yen (FY2007)
Scope of business	: The manufacturing of investigational nucleic-acid drugs,
	contracting of DNA and RNA synthesis, development of
	innovative nucleic-acid synthesis technology, etc.
Company name	: Hosokawa Powder Technology Research Institute
Headquarters	: 1-9 Shoudai Tajika, Hirakata City, Osaka
Representatives	: Chairman; Masuo Hosokawa
	President; Yasuo Kousaka
Established	: October 2002 (Founded: September 1958)
Capital	: 491 million yen
Number of employees	: 39 (As of March 2008)
Scope of business	: Unique particle designing and processing technologies
	specializing in nanoparticle technology
	* Contract R&D, contract of material processing, distribution
	of nano compound particle related material or products,
	manufacture and distribution of high functional cosmetics and
	hair growing agents
Share holder (equity ratio)	: Hosokawa Micron Corporation (100%)
Consolidated sales	: 50,510 million yen (FY2007)
Company name	: AnGes MG, Inc.
Headquarters	: 7-7-15 Saito-asagi, Ibaraki, Osaka
Representative	: President and CEO, Ei Yamada
Established	: December 1999
Capital	: 9,439 million yen
Number of employees	: 79 (As of December 2007)
Consolidated sales	: 1,720 million yen (FY2007)
Scope of business	: Research & development of genetic medicine