

Innovative Technology & Advanced Drug

# Hanmi Pharm. Co., Ltd.



October, 2005

**Hanmi** Hanmi Research Center

**Vision:**

- 01 "Outstanding Pharmaceutical Company representing Korea"
- 02 "Global Company with overseas sales exceeding domestic sales"
- 03 "The Leader in the field of biotechnology"



**Company Profile:**

Hanmi Pharmaceutical Co., Ltd was established in 1973 and set "Respect for human beings and creation of values" as its management philosophy. Hanmi continuously showed 20-30% of growth rates since its establishment, and in spite of 30 years of not so long history, Hanmi became the largest generic pharmaceutical company in Korea. Hanmi is positioned as the leader of Korean pharmaceutical companies with concentration on development of generic drugs through world-class R&D capabilities, complimented by its strong sales and marketing organization all driven by unique management strategies.



**CEO:** S.K.LIM, Chairman / K. Y. Min, President

**Locations:**

- Headquarters : 45, Bangi-dong, Songpa-gu, Seoul, KOREA
- R&D Center : 377-1, YoungChun-ri, DongTan-Myun, Hwaseong-si, Gyeonggi-do, KOREA
- Plant : 893-5, Hajeo-ri, Paltan-myun, Hwaseong-si, Gyeonggi-do, KOREA

**Website address :** www.hanmi.co.kr

**Stock Exchange Listings :** KSE008930

**Market cap :** US\$738 Million (as of September,2005)

**Employee :** 1,400 (as of September,2005)

**2004 revenues :** KRW 317 Billion

**2004 actual R&D spending :** KRW 26.4 Billion (8.3% of total revenues)

### Major Pharmaceutical Products

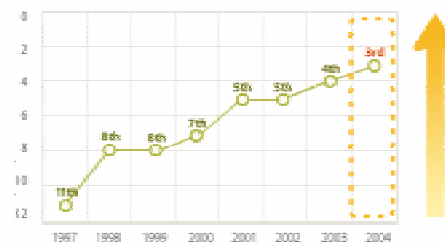
- Finished goods (Prescription drug)
  - Amodipin (Amlodipine camsylate)
  - Clari (Clarithromycin)
  - Itra (Itraconazole)
  - Carnitil (Acetyl-L-carnitine)
  - Mucolase (Streptokinase and streptodornase)

Sales Growth



- Finished Antibiotic in Bulk
  - Sterile Cefotaxime sodium USPXXIII
  - Sterile Ceftriaxone sodium USPXXIII
  - Sterile Ceftazidime Pentahydrate USPXXIII
  - Ceftazidime for Injection USPXXIII

Rank



- Intermediates in Bulk
  - Cefoperazone Dihydrate
  - Cefotaxime Acid
  - Crude Cefotiam Hydrochloride
  - Ceftazidime Dihydrochloride
  - Ceftriaxone Acid
  - Phenylisoserine
  - TACA, VACA

Sales Breakdown





Hanmi is one of the leading research-driven pharmaceutical companies in Korea. Currently, we are focusing on new anti-cancer drug discovery and long-acting protein drugs using in-house platform technologies.

**R&D Pipeline:**

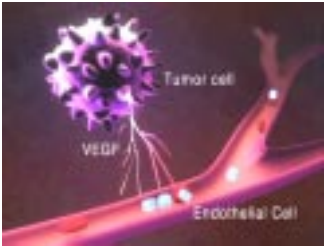
September, 2005

Field	Candidates	Descriptions/ Indications	Status
NCE / NME	<b>Oraxol™ (Paclitaxel + HM-30181A)</b>	- Combination of Paclitaxel with new PGP inhibitor(HM-30181A)/ MDR cancers, Restenosis	Late Preclinical
	<b>HM-60390 Series</b>	- Dual(her-1 & her-2) targeting EGFR TKI	Preclinical
	<b>HM-10411</b>	- G-CSF mutein with better activity & solubility/ neutropenia	Preclinical
Long-acting Protein Conjugates	<b>HM-10460</b>	- Long-acting G-CSF conjugate/ neutropenia	Preclinical
	<b>HM-10560</b>	- Long-acting hGH conjugate/ growth failure	Discovery
	<b>HM-10660</b>	- Long-acting IFN-alpha conjugate/ HCV, cancer	Discovery
	<b>HM-10760</b>	- Long-acting EPO conjugate/ anaemia	Preclinical

\* **NCE:** New Chemical Entity, **NME:** New Molecular Entity

**New Anticancer Drugs:**

The Discovery team of Hanmi has been conducting research in the anti-cancer drugs based on a new concept. They are pioneering new chapters in developing anti-cancer agents and are continually generating pharmaceutical candidates for blocking signal transduction pathways which are involved in cancer growth factors and angiogenesis.



Additionally, a clinical trial for Oraxol™, an oral paclitaxel formulation, is scheduled to start in the near future on the basis of good results from pre-clinical trials.

## Long-acting Protein:

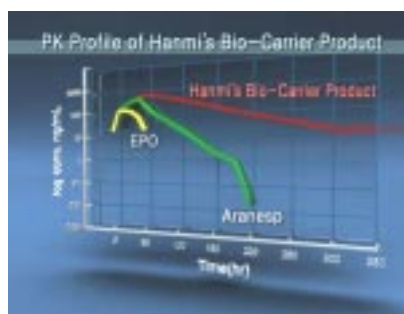


Biomedicines such as protein drugs and antibodies should be administered periodically by injection to treat difficult-to-cure diseases and it has become a very important research target for expensive bio-medicines newly developed as a long-acting formulation to maximize the value of the medicine.

Hanmi has developed a recombinant biocarrier which can extend the half-life of peptide/protein drugs to several weeks. The biocarrier was developed from a human protein and can be produced via high-yield fermentation of *E. coli*. Non-peptidyl polymeric linker is used to make site-specific conjugation of the biocarrier and active peptide/protein drugs.

We have already confirmed its priority and capability of our technology from various proofs of concept studies such as EPO, interferon alpha, G-CSF and human growth hormone in the animal models.

Applying this technology, the inconvenience of frequent medication will be overcome by one or two injections per month because the conjugated proteins with our carrier have long efficacy in the body for 2-3 weeks with only one injection. This platform technology can be applicable to make most of bio-medicines as a form of long-acting formulation, and it is expected to bring about a dramatic change as a pharmaceutical innovation in the future.



## Protein-Carrier Conjugates



### ■ Carrier

- Recombinant carrier produced from *E. coli*.
- Maximize the efficacy and potency of the protein conjugates.

### ■ Linker

- Non-peptidyl, site-specific, GRAS (generally regarded as safe) material.

### ■ Protein or Peptide

- Therapeutic peptides, cytokines, regulatory proteins, and antibodies.
- The basic concept was proved using several therapeutic proteins.

We are currently seeking collaboration and licensing partners for co-development of long-acting protein technology. Please feel free to contact us if you have proprietary proteins and want to

develop next generation products using our long-acting protein technology platform.

### **Newly Modified Drugs:**

Newly modified drugs (super generics) mean that they should have enhanced suitability, safety, efficacy and bio-availability compared to original compounds. We have already developed amlodipine camsylate (Amodipin<sup>TM</sup>) which has improved photo-stability compared to amlodipine besylate and we also successfully finished the phase III clinical trial of sibutramine new salt as an anti-obesity drug. Moreover, we are developing several blockbuster drugs in the cardiovascular and anti-diabetes area as improved chemical entities.

### **Development of New Synthetic Pathway:**

Hanmi has been developing many kinds of new synthetic pathways by overcoming harsh patent barriers. By doing so, Hanmi has launched first generic products in the domestic market leading Korean pharmaceutical companies. Moreover, Hanmi transfers its novel synthetic technologies to the original companies, i.e., synthetic process technology of Ceftriaxone to Hoffman-La Roche in 1989.

### **Formulation and DDS Technology:**

Hanmi has been building strong formulation technologies and drug delivery systems over 15 years. And, we are broadening our creative technologies to various product developments using micro emulsion, nanotechnology and sustain release technologies. As a pride of our achievements, we had an experience of transferring our unique micro emulsion technology to Novartis in 1997.

Hanmi has focused on research and development since its foundation in 1973. For developing innovative pharmaceutical products, Hanmi has continuously invested 5-6 % of its turnover into R&D and will strengthen our R&D capacity by increasing the investments to over 10 % in the near future to develop our own cutting-edge technologies. Moreover Hanmi will increase its expert research staff from 150 to 300 in the coming few years.



**"Re-educate staff members to reach their full potential"**

**"Recruit expert research personnel from our human resource pool system"**

We help research personnel gain broader perspective, especially in biotechnology and new drug discovery.

**"Focus on anticancer area for new drug development program"**

**"Develop next generation protein drugs using our long-acting protein conjugate platform technology"**

The innovative development programs in the above fields are the major focus of our company's long-term R&D plan.

**"Cooperate with promising biotech ventures and academic research fields"**

**"Make strategic alliances with multinational pharmaceutical companies"**

These partnerships and collaborations will be continuously pursued through our Research Alliances program.

**"Launch one or two newly modified drugs every year"**

**"Develop global innovative new anticancer drugs and long-acting proteins by 2010"**

Hanmi Research Center will lead the growth of whole Hanmi enterprise group as a worldwide pharmaceutical company with competitive and prolonged creation of new drugs.



### Suggesting Research Collaboration

Hanmi Research Center is more open than ever to exploring new opportunities. Please feel free to contact us to discuss any suggestions for research collaboration.

We can help your opportunity to make a reality.



### Talk To Us

Here are contact persons who can answer your questions and get the process started.

Interest	Contact Person	e-mail	Phone No.
License-in & out	<i>Dr. Yun-Ha Lee / Director</i> (Business Development)	<a href="mailto:lyh@hanmi.co.kr">lyh@hanmi.co.kr</a>	Tel. +82-2-410-9160 Fax. +82-2-410-9069
Research Collaboration & Others	<i>Mr. Chang-Ju Choi / Part Leader</i> (Hanmi Research Center)	<a href="mailto:cjchoi@hanmi.co.kr">cjchoi@hanmi.co.kr</a>	Tel. +82-31-371-5027 Fax. +82-31-371-5006