**Garching Innovation** GmbH
Technologien aus der
Max-Planck-Gesellschaft

# GarchingInformation 1/05

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## Our Technology Transfer Activities for the Max Planck Society

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# Welcome

Dear Reader,
Together with our new web site, we are pleased to present the first edition of Garching**Information**. This newsletter will be published online regularly and will serve as a forum for reporting the latest news on our technology transfer activities.

Our target group is as diverse as our business. For this reason, we have designed the various columns of our newsletter with the aim of appealing not only to scientists, inventors and potential founders in the Max Planck Institutes, but also to investors, industry and cooperation partners, as well as other network partners.

In an effort to provide widely differing perspectives on current issues related to technology transfer, we will ask representatives from research, politics, industry and investors to share their "Viewpoint" in a guest column. We are very pleased that ***Prof. Dr. Peter Gruss***, President of the Max Planck Society (MPS), agreed to do this for our first edition of Garching**Information**.

A key focus of Garching**Information** will be "News" about MPS start-ups as well as licensing and know-how agreements.

A further column is "MPS Start-up Profile", which will put the spotlight on a different start-up in each edition. For our first issue, we are pleased to present ***Aurigon Life Science GmbH*** in Tutzing. ***Aurigon*** was founded in 2000 and offer its competence in preclinical research and development to biotech as well as pharmaceutical companies.

"Technology Offers" will highlight some of our patents and know-how. You will also find information about these technologies on our web site.

The column "Frequently Asked Questions" is aimed at helping scientists in the Max Planck Institutes to understand various patenting issues. It also targets potential and active founders in the Max Planck Institutes, providing information that could encourage them to start a new company or make them aware of particular risks in the start-up process.

We hope that you like our selection of articles and we look forward to receiving your comments and suggestions, as well as any constructive criticism you may have.

We wish you an enjoyable read and all the best.

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## "Viewpoint" – Guest Column

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**Prof. Dr. Peter Gruss,**
*President of the*
*Max Planck Society*

### Technology transfer is a long-term responsibility of the Max Planck Society

We all know that Albert Einstein, whose miraculous period of breakthroughs 100 years ago is being celebrated worldwide this year, was a great theorist in the world of physics. What is less well known: Einstein registered 14 patents (three of which for refrigerators) and cooperated on roughly 50 inventions. None of these inventions, however, were produced. Yet the theoretical research of Einstein and others like Max Planck and Werner Heisenberg brought about significant practical results, one might even say profound changes: Without it, the information age would never have dawned; there would be no *global positioning system*, no laptops, no mobile phones, no CDs.

These examples show how essential basic research is to technical advancement and, thus, to economic prosperity. There is certainly money to be made with minor improvements to existing products. What really makes a difference socially and economically, though, are breakthrough innovations, such as the automobile, biotechnology or microelectronics. These represent a radical departure from older concepts, and result in a multitude of new products. Innovations of this kind are not created on the drawing boards of marketing strategists. Rather, they are very often brought about by the discoveries made in publicly-supported basic research. Or, to quote Einstein: "Leaving research exclusively in the hands of engineers, we would have perfectly functioning oil lamps, but no electricity."

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# News

■ March 2005: ***Evotec OAI AG*** announced the acquisition of the outstanding 78 % of ***Evotec Neuroscience GmbH (ENS)*** not already owned by Evotec. At the same time ***Evotec*** secures 47 Mio. Euro in cash to develop the CNS pipeline of ***ENS*** (More →). Furthermore ***Evotec*** announced the in-licensing of a pharmaceutical compound that already has completed a phase I clinical trial. More →

■ March 2005: ***GPC Biotech AG*** announced the acquisition of material assets of ***Axxima Pharmaceuticals AG***. Axxima, a drug discovery company in the field of kinase inhibition, filed for insolvency in Dec. 2004. More →

■ Feb. 2005: ***Bayer Cropscience***, Monheim, the ***Max Planck Society/Garching Innovation GmbH***, Munich, and ***Monsanto***, St. Louis, USA, have signed an agreement to ***end a long-standing patent dispute***. At issue was a patented technology for creating transgenic crops by means of transformation with the so-called Ti-plasmid of Agrobacterium tumefaciens. The transformation technology allows scientists to transfer DNA to plant cells. More →

■ The novel drug addressing sleeping disorders ***"Gaboxadol"*** developed at the ***MPI of Psychiatry*** in Munich, continues on its successful development path. We expect that the new drug approval (NDA) will be filed late 2006/early 2007. More →

■ GI has licensed another important technology (microRNA) in the field of ***RNA interference***. Co-exclusive licences were granted to ***Alnylam Pharmaceuticals, Inc.*** and ***Isis Pharmaceuticals, Inc.*** More →

■ In Feb. 2005, Neuronova AG, which changed its name to ***Affectis Pharmaceuticals AG*** earlier this year, announced that it has signed a ***collaboration agreement*** with ***Mitsubishi Pharma Corp.*** for therapeutic target validation in the field of depression and anxiety. ***Affectis*** had already concluded a collaboration agreement with the French ***Prestwick Chemical Inc.*** in Nov. 2004 to optimize a novel molecule for treating depression. More →

■ A ***partnership*** between ***Alnylam Pharmaceuticals, Inc.*** and ***Medtronic, Inc.*** has been formed in early 2005 and will aim to develop RNAi therapeutics for the treatment of neurodegenerative diseases. (More →) ***Alnylam*** published in Nature a major breakthrough in RNAi therapeutic develop-

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# News

ment in Nov. 2004, based on its *in-vivo*-demonstration of RNAi-mediated gene silencing in mammals. More →

■ ***Scienion AG***, signed a license agreement with ***Garching Innovation GmbH*** for an MPS patent covering ultra low level liquid handling in Nov. 2004. In addition the ***"Innovationspreis Berlin-Brandenburg"*** was awarded to the company for the second time in Dec. 2004 for its sciFLEXARRAYER. More →

■ ***medres – medical research GmbH*** won the ***"Kölner Innovationspreis"*** in Dec. 2004. ***medres*** was founded in May 2004 as a start-up company of the MPI for Neurological Research in Cologne, and markets a new type of cryodetector and electrophysiological measuring components. More →

■ ***DeveloGen AG*** announced in Nov. 2004 that it received a BMBF ***BioChance-PLUS grant***. This funding will be used to support a project for the treatment of diabetic complications. More →

■ ***Artemis Pharmaceuticals GmbH*** negotiated an ***RNAi research partnership*** with ***Merck & Co. Inc.*** in Oct. 2004. Furthermore, Artemis negotiated a partnership with ***Schering AG*** in Nov. 2004 in the field of mouse genetics. More →

■ ***Protagen AG*** closed a ***growth financing round*** with ***S-Venture Capital Dortmund***, securing Euro 500,000 in Oct. 2004. ***Protagen*** is a spin off of the Ruhr-Universität-Bochum and later expanded by incorporating a project originally intended to be a start-up of the MPI for Molecular Genetics in Berlin. More →

■ ***Xantos Biomedicine AG***, which completed a further financing round in Aug. 2004, signed several ***service agreements*** in late 2004/early 2005 with ***Serono***, ***Roche*** and others. In Feb. 2005, ***Xantos Biomedicine AG*** received a grant from the Sixth EU Framework Program for an "Angiotargeting Project". More →

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# MPS Start-up Profile


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**Dr. Gerhard Hager**
*CEO and co-founder of*
*Aurigon Life Science GmbH*

## Aurigon Life Science GmbH Your partner in preclinical research and development:

***Aurigon Life Science GmbH*** was founded 2000 as a "spin-off" from the Max Planck Institute of Neurobiology in Martinsried, Germany. ***Aurigon*** is located in Tutzing and is a contract research organization (CRO), which conducts preclinical research and development in compliance with national and international requirements (OECD, GLP, ICH, EMEA, GenTG). The main emphasis of ***Aurigon*** are pharmacological studies and toxicological testing. ***Aurigon*** is a competent partner during the development of new drugs and therapies.

In close collaboration with the sponsor ***Aurigon*** carries out orientation experiments, the first, indispensable safety toxicological investigations (toxicity testings according to GLP) as well as the screening of pharmacological parameters (e.g. proof of concept, efficacy, pharmacodynamics, biodistribution, pharmacokinetics, immunogenity, bioequivalency, safety pharmacology). ***Aurigon*** offers a comprehensive range of services in the fields of pharmacology, toxicology, histology, pathology, analytics, cell biology, breeding genetics, molecular biology and protein biochemistry.

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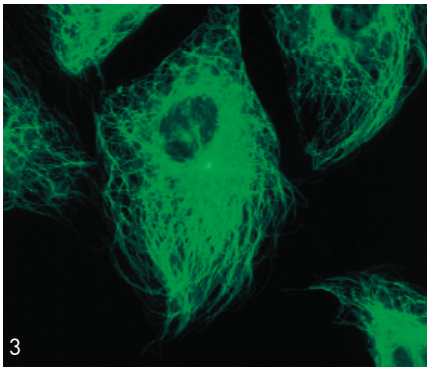
# Technology Offers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## Peptides as Antioxidants

Tyrosine- and/or tryptophane containing petides are very effective antioxidants. They can be used for therapy and prevention of diseases which involve oxidative processes in the extracellular space. Such diseases are e.g. artheriosclerosis, cataracts, diabetes, arthritis as well as the aging of skin and joints.

More (GI 2630 WEL) ➔

## Means and methods for treating diseases correlated with or caused by non-physiological levels of microtubule-associated PP2Ac

Hyper- or hypophosphorylation of proteins is known to be pathogenic in a variety of diseases. Most important examples include Alzheimer's disease and other neurodegenerative disorders such as Huntington's disease, but also cancerogenesis. In many cases (e.g. during the development of Alzheimer's disease and of different types of tumors) non-physiological levels and activity of microtubule-associated protein phosphatase 2A (PP2Ac) have been found to be the underlying biochemical defect. So far, although theoretically very effective in terms of Alzheimer's or tumor therapy, external manipulation of PP2Ac levels or activity was impossible due to tremendous toxic side effects for the cell. Scientists of the MPI for Molecular Genetics, Berlin have identified a novel mechanism of cellular PP2Ac regulation that concentrates on the microtubule-associated pool of PP2Ac, and a more gentle possibility of efficient external manipulation of intracellular PP2Ac levels lacking severe cellular side effects.

More (GI 2950 GMSG) ➔

## Genes for the biosynthesis of Pederin, a potent antitumor agent

Polyketides of the pederin family are a group of structurally closely related natural products isolated from terrestrial beetles and marine sponges. Many of these compounds exhibit

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## Technology Offers

potent antitumor activity against a variety of cell lines. Pederin from *Paederus spp.* rove beetles inhibit murine P388 leukemia cells at an IC50 of 0.07 ng/ml, and the activities of several spongederived compounds are in a similar range. For the recently described psymberin from an *Ircinia sp.* Sponge a striking selectivity towards solid tumors has been reported, which suggests that pederin-type natural products are promising leads for the development of anticancer drugs. More (GI 2909 ZJE)➔

■ **Biomimetic systems of lipid membranes**
This is a new technology of the MPI for Polymer Research – suitable as a modell system for the investigation of biologic membranes with potential applications in screening methods, sensors and bio-electric devices. More (GI 2961 KBC) ➔

■ **Reversible, debris free detachable adhesive connection**
This is a patented technology of the MPI for Metal Research. The adhesive properties of objects can be increased by means of well definded micro structuring of the same, enabling an attachment/detachment similar to that of insects or geckos. Applicable wherever adhesive connections with a predefined adhesive and reversible force are needed between similar or different materials. More (GI 3000 GBC) ➔

**Other Technology Offers** and information on new developments, inventions and technologies for wich Garching Innovation is currently seeking industry partners can be found at: www.garching-innovation.de.

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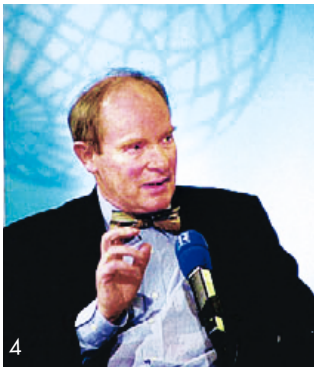
## Garching Innovation GmbH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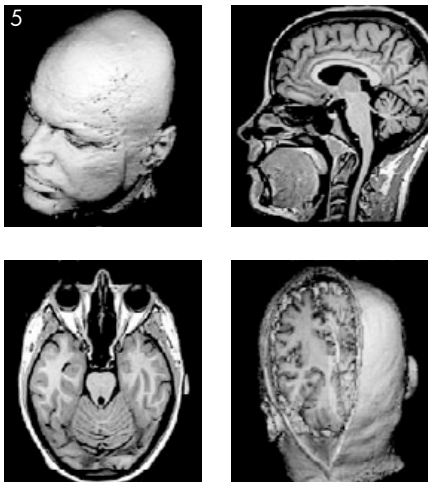
**Dr. Bernhard Hertel,**
*Managing Director of*
*Garching Innovation GmbH*

### More than 30 years of technology transfer experience

The transfer of technology from research to industry has become increasingly important in recent years. The Max Planck Society (MPS), which has actively promoted this transfer for many years, has stepped up its efforts in this area. This is evidenced not only by more than 300 license agreements, but also by the number of start-up companies successfully launched on the basis of technologies developed at Max Planck Institutes.

About the history of GI ➔

In 1985 our most successful project, a magnetic resonance imaging project sponsored by the German Ministry of Education and Research (BMBF) produced an invention that is known by the acronym "FLASH". Garching Innovation (GI) secured this invention, which made a major contribution to its turnover since 1992. To date, it has generated more than Euro 120 million. However, asserting it entailed no small effort, including two infringement proceedings in the US and two others in Germany.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With FLASH 3D-datasets for MRI pictures can be acquired in a very short time.

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## Garching Innovation GmbH

Garching Innovation is focused on the core task of identifying inventions and know-how in the Max Planck Institutes, securing them through patent applications and exploiting them through license agreements. Support for MPS staff aiming to start a company on the basis of their inventions has become an additional focus of work at GI in recent years. The objective here is to ensure that a start-up is so well prepared that market success is largely ensured. Since knowledge about the start-ups is essentially concentrated at GI, the company has also been put in charge of the MPS portfolio management.

Today, GI has 17 employees. The team of scientists, business experts and lawyers, plus a well-trained staff of administrative assistants, ensures the effective implementation of the technology transfer tasks for which the company is responsible. The company's years of experience in this complex field is also recognized by many other organisations, both domestic and foreign, as evidenced by the inquired numerous visits and interviews.

We hope to continue to fulfill our mission and master the challenges of the ever-changing landscape of innovation. We are assisted by an advisory board comprising top personalities with a broad range of experience from research, industry and politics.

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# Garching Innovation – Internal Matters

■ ***We moved in October 2004*** and are now located on the second floor at Marstallstrasse 8, 80539 Munich. All other details remain unchanged. For our full address, please see the imprint.

■ ***New Web Site:*** Our new web site is now up and running at www.garching-innovation.de.
Check it out to learn more about who we are and what we do.

■ The new annual report of the Max Planck Society, including our ***"2004 Year in Review"***, will be published in spring 2005. A pre-print version of the "2004 Year in Review" ➔ is available on our web site.

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# Upcoming Events

- April 11: At the ***MPI for Brain Research*** in Frankfurt, Dr. Matthias Stein-Gerlach will give a talk about GI and its opportunities for technology transfer activities. For further information please check the institute bulletin board.

- April 12: At the ***MPI for Mathematics in the Sciences***, Leipzig, PD Dr. Wolfgang Tröger will give a ***talk*** about GI and its technology transfer activities. For further information please check the institute bulletin board.

- April 18: At the ***MPI for Terrestrial Microbiology*** in Marburg, Dr. Matthias Stein-Gerlach will give a ***talk*** on "Garching Innovation: A Dual Strategy for Success" (at 5:00 p.m. in the auditorium). More →

- May 5: At the invitation of the ***Licensing Executive Society*** (LES USA & Canada Inc.), Dr. Bernhard Hertel will give a ***talk*** on technology transfer for the MPS, at the LES "Spring Meeting" in Raleigh, North Carolina. More →

- June 3: On the occasion of ***PATINFO 2005*** (June 2/3) at the TU Ilmenau, Dr. Bernhard Hertel will give a ***talk*** on "Technology Transfer from Basic Research". More →

- June 15: Munich Network – Netzwerk München e.V., under the direction of Prof. Bernd Wirtz, will host the ***technology forum »Next Generation Internet«*** – Outlook for Challenges and Opportunities. More →

- July 15: At the ***MPI of Biochemistry*** in Martinsried Dr. Egenhard Link will give a talk about GI and its technology transfer activities. For further information please check the institute bulletin board.

Additional ***visits and presentations*** by our patent and licensing managers are planned in the upcoming months. The exact dates and locations of these events will be announced in due time and posted on the institute bulletin boards or communicated in separate invitations.

We also highly appreciate any direct requests for visits and talks of GI at your institutes.

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# Frequently Asked Questions

**»Do I have a chance to secure financing for a start-up these days?"**

A legitimate question we are confronted with given the recent lack of early stage financing. In addition several support programs for projects in the pre-seed stage were discontinued. This discourages scientists from seriously considering a technology based and thus high-risk start-up. But even though starting a company is associated with significantly greater difficulties and risks than during the 1990s and up until 2002, there are nevertheless numerous encouraging examples even in these difficult times.

After all, contrary to the general trend, eight companies were spun out in 2003/2004 by the Max Planck Society. These recent examples show that there is still financing available. Especially for start-ups that require less financing and are closer to the market ***government-supported and classic bank financing may be an alternative*** to the rather few opportunities to receive venture capital financing. More →

In the next edition of Garching**Information** we will address the question: ***"Publication and patents – a contradiction in terms?"***

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# Contact

Some of you already know GI. For those of you who have not yet had any contact with us, we would like to take this opportunity to briefly introduce the GI team to you:

**Managing Director:**
Dr. Bernhard Hertel, Physicist

**Patent- and Licensing Manager:**
Dr. Bernd Ctortecka, Physicist
Dr. Jörn Erselius, MBA, Biologist
Dr. Egenhard Link, Biologist
Dr. Matthias Stein-Gerlach, Biologist
PD Dr. Wolfgang Tröger, Physicist

**Technology Analyst:**
Dr. Dieter Treichel, Biologist

**Start-up Consultants:**
Dipl.-Kff. Astrid Giegold, Business Economist
Dipl.-Kfm. Ulrich Mahr, Business Economist

**Agreements and Finances:**
Ass. Jur. Florian Beilhack, Laywer
Maria Pasecky, Business Economist (VWA)

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Chairman of the advisory board: Dr. Karsten Henco
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In addition the first edition of Garching**Information** is published one-time in the present issue of the MPS research magazines "MaxPlanckForschung" and "MaxPlanckResearch" respectively.

We gratefully acknowledge the very helpful cooperation and the generous support of the ***Press Department of the Max Planck Society*** – particularly we would like to thank Mrs. Daniela Schäfer and Mr. Helmut Hornung.

We greatly appreciate your ***suggestions, and are open for any improvements. Please contact:***
Dipl.-Kff. Astrid Giegold, Evelin Kaiser
Newsletter@garching-innovation.de

To unsubscribe to Garching**Information**, please use this Link.

Design: A34 Helmut Gebhardt, München

Photos:
1: Antje Meinen
2: Aurigon Life Science GmbH
3: MPI für biophysikalische Chemie, Göttingen
4: Wolfgang Filser

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5: Biomedizinische NMR Forschung GmbH

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# "Viewpoint" – Guest Column

**Prof. Dr. Peter Gruss,**
*President of the*
*Max Planck Society*

## Technology transfer is a long-term responsibility of the Max Planck Society

We all know that Albert Einstein, whose miraculous period of breakthroughs 100 years ago is being celebrated worldwide this year, was a great theorist in the world of physics. What is less well known: Einstein registered 14 patents (three of which for refrigerators) and cooperated on roughly 50 inventions. None of these inventions, however, were produced. Yet the theoretical research of Einstein and others like Max Planck and Werner Heisenberg brought about significant practical results, one might even say profound changes: Without it, the information age would never have dawned; there would be no *global positioning system*, no laptops, no mobile phones, no CDs.

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➔The Max Planck Society is charged with promoting basic research in newly emerging fields and in areas that hold

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## "Viewpoint" – Guest Column

particular promise for the future – all at the highest levels. The success of our institutes in fulfilling this duty is underscored by publications in the most significant scientific journals, the number of Nobel prizes or the extent of our international renown.

The best research, however, means little to our country, if it cannot be used effectively from an economic standpoint. Scientists often do not know as to how their discoveries can be patented and brought to market. This is why, 34 years ago, the Max Planck Society established its subsidiary, *Garching Instrumente GmbH*, which is today's *Garching Innovation GmbH* (GI). The successes achieved by GI leave no doubt that it was worthwhile to build up this company with the same care given to the establishment of our institutes. Licensing income from patents – the standard by which the economic value of inventions is measured – has been consistently higher in the Max Planck Society since the 1980s than in other German research organizations. Over the past 14 years, 65 companies have been established, creating more than 2,200 jobs. Recently, an expert commission from the European Union commended *Garching Innovation* as a model for technology transfer from the scientific community.

Still, much better use could be made of the research results achieved in this country. Between discovery and industrial application, there is often a wide gap, due to insufficient funding and a lack in industrial know-how, which cannot be bridged by the institutes. The companies are neither willing nor able to provide the needed financing and infrastructure.

For this reason the Max Planck Society has developed a model, as a way to close this gap. Our idea is to use public funding for the launch of an "Innovation Fund for German Research". This fund could be used to finance the advanced development of research findings. It could also support scientists as they structure the further development of their research findings.

As important as that the coupling of research and application is, it is and will remain essential that practical usage does not become the main focus of basic research. Here too, Einstein's wisdom prevails: "If practical aims take precedence, true science will stagnate."

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## News

The novel drug addressing sleeping disorders ***"Gaboxadol"*** developed at the ***MPI of Psychiatry*** in Munich, continues on its successful development path. We expect that the new drug approval (NDA) will be filed late 2006/early 2007.

➔The Denmark-based ***Lundbeck*** – the exclusive licensee of the sleep drug "Gaboxadol" – initiated clinical development phase III back in June 2003. (More ➔) Last year saw the achievement of yet another important milestone for successful development and marketing. In February 2004, an agreement was signed with ***Merck & Co., Inc.*** that gives Merck exclusive rights to the drug in the US market. Merck paid USD 70 million upon signing the agreement, and it will make additional milestone payments of up to USD 200 million until approval is granted. (More ➔) In June 2004, the alliance between Lundbeck and Merck was expanded to include Japan. (More ➔)

Gaboxadol is a so-called direct GABA-A receptor agonist. It will presumably be the first drug in its class to be granted approval. Unlike traditional sleeping pills, such as benzodiazepine, Gaboxadol supports the natural sleep architecture. This means that deep sleep and REM sleep phases are maintained, so patients feel rested when they awake, just as they would after a normal sleep cycle. Furthermore, the potential for drug addiction appears to be much lower, allowing the drug to be taken for extended periods of time.

Approval will likely be requested in the US and Europe late 2006/early 2007.

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# News

GI has licensed another important technology (microRNA) in the field of ***RNA interference***. Co-exclusive licences were granted to ***Alnylam Pharmaceuticals, Inc.*** and ***Isis Pharmaceuticals, Inc.***

→RNA interference, or RNAi for short, is a naturally occurring cellular mechanism that influences gene expression within a cell. RNA interference is mediated by small double-stranded RNA molecules. These include "short interfering" RNAs (siRNAs) and microRNAs (miRMAs). Both are produced from larger precursor molecules. siRNAs are generally 21–22 nucleotides long, and miRNAs 19–25 nucleotides.

The use of siRNAs is already widespread in functional genomics research, and the first therapeutic approaches look very promising.

In contrast to siRNAs, which break down the complementary mRNA, miRNAs bind to the 3'-non-translated region of mRNA and prevent translation. It is presumed that mRNA breakdown is not triggered.

Although the function of miRNAs has not yet been described as extensively as that of siRNAs, they, too, are believed to have great therapeutic potential.

GI has now ***co-exclusively licensed*** a basic patent from Tom Tuschl's research group at the Max Planck Institute for Biophysical Chemistry in Göttingen (now at Rockefeller University, New York) to the two US firms ***Alnylam*** and ***Isis***. (More →) GI is pleased to have found these competent partners for the further development and commercialization of this technology.

The ***Alnylam Pharmaceuticals, Inc.*** is a start-up of the Max Planck Society, together with the Massachusetts Institute of Technology (MIT), the University of Massachusetts and the Whitehead Institute. ***Alnylam*** has offices in Cambridge, USA and Kulmbach, Germany.

Further information about Alnylam →

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## News

***Protagen AG*** closed a growth financing round with ***S-Venture Capital Dortmund***, securing Euro 500,000 in Oct. 2004. ***Protagen*** is a spin off of the Ruhr-Universität-Bochum and later expanded by incorporating a project originally intended to be a start-up of the MPI for Molecular Genetics in Berlin.

➔Today, ***Protagen AG*** has four divisions: analytics, bio-IT, protein biochips and pharma actives. The analytics division offers services such as protein analysis (under good laboratory practice (GLP) conform conditions) and proteome studies, as well as product developments for industry customers. The bio-IT division formed a strategic alliance with Bruker Daltonik GmbH, Bremen to further develop the proteomics software ProteinScape TM, and offers customized service in proteomics data analysis. This year, ***Protagen***'s protein biochips division will put several products on the market. The pharma actives division uses ***Protagen***'s extensive experience in proteomics to develop pharmaceutical agents.

Further information about Protagen ➔

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# MPS Start-up Profile


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**Dr. Gerhard Hager**
*CEO and co-founder of*
*Aurigon Life Science GmbH*

## Aurigon Life Science GmbH
## Your partner in preclinical research and development:

***Aurigon Life Science GmbH*** was founded 2000 as a »spin-off" from the Max Planck Institute of Neurobiology in Martinsried, Germany. Aurigon is located in Tutzing and is a contract research organization (CRO), which conducts preclinical research and development in compliance with national and international requirements (OECD, GLP, ICH, EMEA, GenTG). The main emphasis of ***Aurigon*** are pharmacological studies and toxicological testing. ***Aurigon*** is a competent partner during the development of new drugs and therapies.

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➔ ***Aurigon*** disposes of a variety of established pharmacological models. If there is no accessible model, which suits to the specific demands of our sponsors, we develop and establish tailor-made models.

Fast moving a new drug into man and then onto the market quickly, is the most important challenge for all our sponsors. Our experienced staff helps our clients in developing a strategy, planning and monitoring preclinical studies, preparing necessary documentation and adhering to regulatory requirements. Early in the development of a new substance, together with the sponsor we address the first

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# MPS Start-up Profile

strategic important questions:

- Guidelines and standards that have to be followed
- Time line of pharmacological and toxicological studies
- Definition of milestones
- Management of preclinical studies

All studies are carried out under the control of an independent quality assurance management. All results are summarized, evaluated and placed as a complete report, if desired according to the requirements of the "Common Technical Document", at the sponsor's use.

The independence of ***Aurigon***, its quality assurance management together with the experience of its staff members gives the sponsor the certainty of high-quality, tailor-made preclinical research, which more than repays its expense.

Innovative, high quality and flexible work is a foremost consideration for ***Aurigon Life Science***. A central part is the Quality Assurance Unit QAU, which supervises the operational procedures according to the "Good Laboratory Practice" (GLP). The principal item is a modern digital "Documentation Management System" (DMS), which administers all documents of the company in a retraceable or if necessary in a revision-safe manner. This system enables the sponsor to gain an insight into the current state of his studies without loss of data security.

The complete operational sequences of ***Aurigon*** are represented and documented in "Standard Operating Procedures" (SOP's), which undergo intensive validation procedures. All areas of ***Aurigon*** follow the rules of "Good Laboratory Practice" GLP.

Further information about Aurigon →

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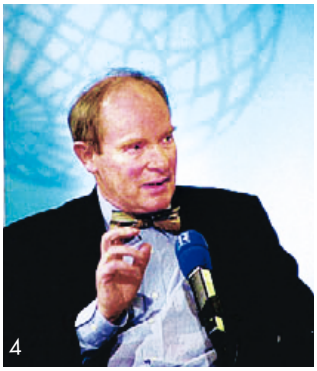
# Garching Innovation GmbH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**Dr. Bernhard Hertel,**
*Managing Director of*
*Garching Innovation GmbH*

## More than 30 years of technology transfer experience

The transfer of technology from research to industry has become increasingly important in recent years. The Max Planck Society (MPS), which has actively promoted this transfer for many years, has stepped up its efforts in this area. This is evidenced not only by more than 300 license agreements, but also by the number of start-up companies successfully launched on the basis of technologies developed at Max Planck Institutes.

➔Garching Innovation GmbH was founded in 1970, when it was known under the name Garching Instrumente GmbH. The name was taken from the company's former location, a "barracks" on the site of the Max Planck Institute of Plasma Physics, and the idea that, in addition to marketing MPS patents, the firm's activities would focus primarily on marketing the devices developed in the scientific environment. But another task was to acquire patents from other research institutes and to exploit them through license agreements. The idea was that the company should be able to finance itself in the long term with one third of the income from license agreements. In the first few years, the staff developed strong activities in the construction and marketing of optical devices, and employed around 30 staff members.

As the business was not very successful, all activities were discontinued and the company was partially liquidated. In 1979, it was re-established under the direction of Dr. Heinrich Kuhn. By late 1979, the firm employed a staff of six and focused solely on the core task of identifying inventions and know-how in the Max Planck Institutes, securing them through patent applications and exploiting them through license agreements. Income from these licenses totalled around DEM 600,000 at the time, but this figure was brought up to more than DEM 2 million over the course of about 10 years.

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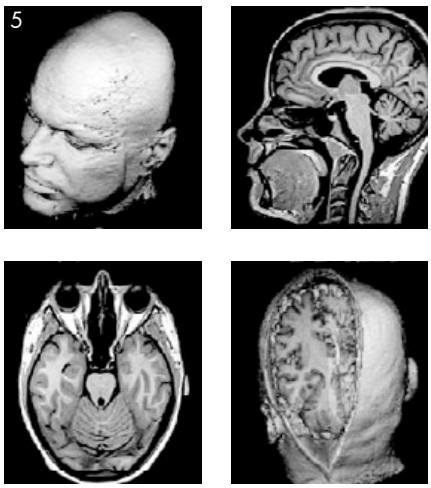
In 1985 our most successful project, a magnetic resonance imaging project sponsored by the German Ministry of Education and Research (BMBF) produced an invention that is known by the acronym "FLASH". Garching Innovation (GI) secured this invention, which made a major contribution to its turnover since 1992. To date, it has generated more than Euro 120 million. However, asserting it entailed no small effort, including two infringement proceedings in the US and two others in Germany.




With FLASH 3D-datasets for MRI pictures can be acquired in a very short time.

Garching Innovation is focused on the core task of identifying inventions and know-how in the Max Planck Institutes, securing them through patent applications and exploiting them through license agreements. Support for MPS staff aiming to start a company on the basis of their inventions has become an additional focus of work at GI in recent years. The objective here is to ensure that a start-up is so well prepared that market success is largely ensured. Since knowledge about the start-ups is essentially concentrated at GI, the company has also been put in charge of the MPS portfolio management.

Today, GI has 17 employees. The team of scientists, business experts and lawyers, plus a well-trained staff of administrative assistants, ensures the effective implementation of the technology transfer tasks for which the company is responsible. The company's years of experience in this complex field is also recognized by many other organisations, both domestic and foreign, as evidenced by the inquired numerous visits and interviews.

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## Garching Innovation GmbH

We hope to continue to fulfill our mission and master the challenges of the ever-changing landscape of innovation. We are assisted by an advisory board comprising top personalities with a broad range of experience from research, industry and politics.

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# 2004 Year in Review

## Positive Developments within the Portfolio of Max Planck Society spin offs

Looking back, 2004 was a year marked by successful initial public offerings (IPOs), strategic alliances, follow-up financing and business plan contests.

Right at the very outset, the new year kicked off with positive news from ***Alnylam Pharmaceuticals, Inc.***, a start-up company that emerged in 2002 from the MPI for Biophysical Chemistry in Göttingen, in collaboration with MIT and the Whitehead Institute in the USA, with the aim of developing RNAi therapeutic agents. By a ***strategic alliance***, Isis Pharma-ceuticals Inc. has acquired a minority interest in Alnylam, with an investment of some $ 10 million. Later, on June 30, 2004, Alnylam also reported that its existing partnership with Merck Inc. has been extended by a project focusing on eye diseases. The up-front and milestone payments resulting from this joint venture could reach up to $ 19.5 million. In addition, Alnylam will receive royalty on sales from Merck, as well as the right for joint marketing with Merck in the USA.

Meanwhile, on May 28, 2004, ***Alnylam*** was successfully ***floated on NASDAQ***, the US market for technology stocks, at a first-time issue price of $ 6. With the inclusion of a surplus allocation option exercised on 750,000 shares, the IPO raised a total of $ 34.185 million. At the end of the year, the share price increased to $ 7.47.

Even though the IPO window has remained virtually closed to new companies in recent years in Germany, ***Epigenomics AG*** took the curageous step of ***going public*** on July 19, 2004 becoming the first German biotechnology company to float in 4 years. At an issue price of Euro 9, Epigenomics raised around Euro 47.8 million. As of the end of the year, the share price was at Euro 8.67. Founded in 2000 as a start-up company emerging from the MPI for Molecular Genetics in Berlin, Epigenomics AG is engaged in developing and marketing new cancer diagnostic products.

Whereas the year 2004 saw no further initial financing projects, the Max Planck Society (MPS) start-up companies continued to show positive news in their ***follow-up financing activities***:

- ***DeveloGen AG*** merged during the summer of 2004 with the Israeli biotech company Peptor Ltd. The merger was accompanied by a third, private financing round, in which some Euro 19 million were raised. DeveloGen AG originated

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in 1997 as a spin off of the MPI for Biophysical Chemistry in Göttingen and was merged in 1999 with Berlin-based MPS start-up HepaVec AG.
The new cash will be used to develop new drugs to treat metabolic disorders such as diabetes and obesity. The merger with Peptor has created a much stronger pharmaceutical product portfolio, which includes at least one potential new drug, which is nearing the end of phase II clinical trials.

- In August 2004 ***Xantos Biomedicine AG***, which was founded in 1999 as a spin-off from the MPI for Biochemistry in Martinsried, secured bridge financing in the amount of Euro 4 million to support the continued development of treatment and diagnosis in the field of cancer and metabolic disorders.

- ***Neuronova AG***, meanwhile renamed ***Affectis Pharmaceuticals AG***, having completed the first part of its financing program in the autumn of 2003, and in summer of 2004 successfully concluded Series A financing raising a total of Euro 4 million. These funds will be used for the identification and validation of promising drug candidates for the treatment of anxiety and depression.

- ***Protagen AG*** successfully completed a growth financing of Euro 500,000 in October 2004 with S-Venture Capital Dortmund. Protagen AG was launched as a start-up in 1999 from the University of Bochum and expanded in the year 2000 with the integration of a project originally considered as a potential independent start-up by the MPI for Molecular Genetics in Berlin. The company today comprises four divisions: Analytics, Bio-IT, Protein Biochips and Pharma Actives. The *Analytics* division offers the analysis of proteins (if required, under GMP-compliant conditions) and proteome studies as a service to industrial clients, along with product development. *Bio-IT* is a strategic alliance with Bruker Daltonik GmbH in Bremen, which was initiated for the purpose of developing the ProteinScape TM proteomics software and now offers proteome data evaluation services. Through its *Protein Biochips* division, Protagen intends to launch several new products on the markets in 2005. The *Pharma Actives* division harnesses the extensive expertise amassed by Protagen in the field of proteomics for the development of pharmaceuticals.

The positive developments within the portfolio of MPS start-ups in the year 2004 contrasts sharply and indeed sadly

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# 2004 Year in Review

with the steep decline in the number of new company formations compared to with previous years. The only new start-up was ***medres GmbH***, set up in Cologne in May 2004 by Stefan Wecker and Bernd Radermacher as an offshoot of the MPI for Neurological Research. The company focuses on the manufacture and distribution of a new type of cryodetector, along with electrophysiological measurement components for medical research. The company is privately financed and will grow organically from sales revenues.

## Winners of awards

- ***medres GmbH*** was selected among 193 competing entries to receive the second prize valued at Euro 10,000 in the "NUK Neues Unternehmertum Rheinland e.V." business plan contest for start-ups in North Rhine – Westphalia. In addition, medres was also the proud winner of the 2004 "Cologne Innovation Prize".

- In the contest for new business start-ups in Baden-Württemberg in May 2004, sponsored jointly by McKinsey, the Savings Banks (Sparkassen), TV channel ZDF and the magazine Stern, ***ECMTEC GmbH*** gained the first place and obtained some Euro 10,000 in prize money. Later in 2004, at a national level ECMTEC took the second place in the "Deutscher Gründerpreis" contest. The technology on which ECMTEC GmbH is based – a patented electrochemical process for the production of three-dimensional sub microstructures in a wide variety of materials – was originally developed at the Fritz Haber Institute in Berlin. In collaboration with engineers at the University of Stuttgart, this technology has been developed as machine tools, which are now being refined and manufactured by ECMTEC.

- ***Scienion AG*** was awarded the "Berlin-Brandenburg Innovation Prize" for the second time in 2004 for its sciFLEXARRAYER dispensing system. Scienion was founded as a start-up in 2001 from the MPI for Molecular Genetics in Berlin in order to specialize in biochip technology.

Thus, in spite of continuing difficulties in the financing market, the MPS start-ups successfully held their ground. The only exception here was ***Axxima Pharmaceuticals AG***, which was forced to file for insolvency at the end of December 2004. Looking ahead to the year 2005, it is already most probable that the number of new start-ups will increase again. Moreover, there are a number of follow-up financing rounds on the agenda. And thanks to the recent revi-

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val of the biotech segment of the German stock market, there is also hope of another IPO by an MPS start-up.

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*This article will be published in the annual report 2004 of the Max Planck Society, too.*

Max-Planck-Institut für terrestrische Mikrobiologie

## Einladung zum Seminar

MPI Seminar Series in Environmental, Cellular, and Molecular Microbiology

# Garching Innovation: a dual strategy to success

Dr. Matthias Stein-Gerlach
Patent and Licensing Manager, Garching Innovation GmbH

## Montag, 18. April 2005, um 17.00 Uhr

im Hörsaal des MPI

Garching Innovation, the techtransfer office of the Max-Planck Society, has a dual strategy to create value for the Max-Planck Society. First Garching is seeking licensees for the inventions made by Max-Planck Scientists to ensure that exciting scientific results can be turned into marketable assets. Second Garching is actively assisting in spinning out companies out of the Max Planck Institutes and supports these start up companies with relevant know-how and networks. The talk will describe these activities, provide case studies and basic principles in the process of intellectual property generation.

Kontakt:
Christian Bengelsdorff
MPI Marburg
Tel: 06421-178-901

**Curriculum vitae**

Dr. Matthias Stein-Gerlach joined Garching Innovation GmbH at April 1st 2004. He is co-founder of Axxima Pharmaceuticals AG, Munich, and U3 Pharmaceuticals, Martinsried, and has joined Axxima's Business Development team as Director Business Development in 2001. One year later he was appointed VP Business Development and has led the department until 2004. Prior to this Dr. Stein-Gerlach was a research group leader at Axxima since 1998. Following his studies in Molecular Biology at the University of Mainz, he joined Dr. Axel Ullrich's laboratory at the Max-Planck Institute for Biochemistry, Martinsried, where he earned his PhD in 1998. In addition, Dr. Stein-Gerlach, completed a three year education in finance and administration.

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# Upcoming Events

June 15: Munich Network – Netzwerk München e.V., under the direction of Prof. Bernd Wirtz, will host the ***technology forum "Next Generation Internet"*** – Outlook for Challenges and Opportunities:

**Technology Forum "Next Generation Internet"**
Outlook for Challenges and Opportunities

**Under the direction of**
Univ.-Prof. Dr. Bernd Wirtz

**Date:**
15.06.2005

**Time:**
2:00 p.m., admission and registration
beginning at 1:00 p.m.

**Key topics:**
- Broadband and Mobility
- Voice over IP, data and speech communication over IP-based networks
- Growth market Web services
- Outsourcing Business
- Public administration and the Internet

**Organizer:**
Munich Network – Netzwerk München e.V.

**Participation fee:**
90,00 EUR (Munich Network Members 50,00 Euro)
Payable in cash or with EC-Card, VISA, Euro-MasterCard at the event ticket office

Further information will be available prior to the event at www.munichnetwork.com

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# Frequently Asked Questions

**"Do I have a chance to secure financing for a start-up these days?"**

A legitimate question we are confronted with given the recent lack of early stage financing. In addition several support programs for projects in the pre-seed stage were discontinued. This discourages scientists from seriously considering a technology based and thus high-risk start-up. But even though starting a company is associated with significantly greater difficulties and risks than during the 1990s and up until 2002, there are nevertheless numerous encouraging examples even in these difficult times.

After all, contrary to the general trend, eight companies were spun out in 2003/2004 by the Max Planck Society. These recent examples show that there is still financing available. Especially for start-ups that require less financing and are closer to the market ***government-supported and classic bank financing may be an alternative*** to the rather few opportunities to receive venture capital financing.

➔The German Federal Ministry of Economic Affairs and Labor (BMWA) is opening up new horizons with an updated and expanded program of sponsorship and financial support. For example on November 01, 2004, the Federal Government announced its new ***ERP-Startfonds***, which replaces the previous "Venture Capital for Technology Companies" (BTU) program. The new fund, some Euro 250 million drawn from "ERP Sondervermögen" (special funding), is available for young and innovative technology-based businesses. Eligible for this program are enterprises that are not older than 5 years and fulfill the SME criteria (maximum of 50 employees, annual sales of a maximum Euro 10 million). As in the case of the preceding BTU program, a lead investor is required who is willing to invest at least an equal amount of capital in the company. The contribution from the ERP-Startfonds is provided on the same economic terms as those

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offered by the lead investor. In contrast to the previous BTU program under which the maximum funding level was set at Euro 1.5 million, the ERP-Startfonds will now contribute a maximum of Euro 3 million, spread over several rounds of financing. Further details are available on the web site of the KfW Mittelstandsbank →

A special module of the ***ERP-Startfonds*** of the KfW Mittelstandsbank (KfW) in Bonn is the ***"Frühphase"*** component (previously "BTU-Frühphase"), which allows technology-oriented start-ups which were entered in the Commercial Register no more than six months previously, to apply to the KfW Mittelstandsbank (KfW) in Bonn for Euro 150,000 in early stage funding. This sum of Euro 150,000 will be provided as quasi-equity in the form of profit-share rights capital (Genussrechtkapital). The vested profit right is a certificated security with a term of seven years. At the end of this term, the KfW has two options: Either the profit-share right security has to be repaid with appropriate interest, or it must be converted into shares in the company. The shareholding is calculated on the basis of an initial stake of round about 25 % in the company at the time of financing and reduced ratably along with capital increases during the period of 7 years.

A further precondition is that the start-up is monitored by a so-called "mentor investor". This mentor investor should have adequate experience of new business start-ups and/or the sector in question and must be accredited by the KfW. ***Garching Innovation*** can fulfill this role. The new business must enter into an agreement with the mentor investor with regard to the latter's fees which are to be paid out of the Euro 150,000 and should not exceed a maximum of Euro 25,000. Alternatively, the parties may also agree to the fee being paid in shares. Further details are available on the Internet at the web site of the KfW Mittelstandsbank →

A significant element in financing the early stages of a new business start-up is the so called ***Überbrückungsgeld (Bridging Finance)***, for which – subject to certain preconditions – an application may be made to the local Labor Office and which lasts for half a year. This money is primarily intended to cover the living expenses of the founders of the business and therefore safeguards the liquidity of the new company. The level of "Überbrückungsgeld" equates to unemployment benefit plus a social security insurance subsidy. One of the prerequisites is that the applicant was previously unemployed. Different to the previous practice before 2004 there is

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a legal right to claim "Überbrückungsgeld", provided that all conditions are fulfilled. Detailed information on "Überbrückungsgeld" is available from the Labor Offices via the Internet ➔ as well as on the web site of the BMGS.➔ Information is also available in summary form, for example at www.ueberbrueckungsgeld.de

***Unternehmerkapital (Enterprise Capital) – ERP Capital for new Business Start-Ups:*** This is a kind of development loan which under certain circumstances may be granted personally to the members of the founding team provided that each founder holds a stake of at least 10 % in the company. The ERP capital must be applied for via the company's principal bank, which for this purpose will require a convincing business concept and a sound financing plan without the risk of over-indeptedness. It must also be clear from the plan that 15 % (in the new Federal States in East Germany 7.5 %) of the required financing can be covered out of own funds. The ERP capital can be used to cover up to 40 % of the cash requirements, however to a maximum of Euro 0.5 million. During the first 5 years of the term, which extends for 15 years in total, the scheme allows for a graduated, highly attractive interest rate (rising at present from an initial 0 % to around 5.5 %). In addition an annual guarantee charge of 1 % is payable on the principal of the loan. After 7 years in which no capital repayments are due, the loan principal is then repayable over the remaining term in half-yearly redemption installments. Further details are available on the web site of the KfW Mittelstandsbank ➔

Another new development on the agenda for 2005 is the so-called ***High-Tech-Gründerfonds (Start-Up Fund)***, which is being created for the purpose of financing R&D-based start-ups during the first 1–2 years of their existence. This fund is, however, linked to a reduction in the "Eigenheimzulage" (home-ownership allowance), which is currently still subject to negotiations at a political level. For this reason it is not presently certain whether this fund, which is intended to be a part of the Federal government's innovation initiative, will actually be available. More precise details of the High-Tech Gründerfonds are not known at present. As soon as further information does become available on this fund, we will gladly keep you informed. More ➔

Other state-supported financing facilities are on offer from the individual Federal States. An excellent summary, including links to the complete programs and guidelines,

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## Frequently Asked Questions

is included in the support programs database to be found on the web site of the Federal Ministry of Economic Affairs and Labor ➔

If you have any further questions on the possible sources of financing listed above, please do not hesitate to contact our Start-Up Consultants at Garching Innovation.

In the next edition of Garching**Information** we will address the question: ***"Publication and patents – a contradiction in terms?"***

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