



*Value through Innovation*

# Partnering for success



# What is Boehringer Ingelheim looking for?

...the most innovative technologies and therapeutic principles at all stages from research and development to commercialisation.

The search for new therapeutic options forms the cornerstone of research and development at Boehringer Ingelheim. We aim to contribute to therapeutic progress by developing tomorrow's cures from today's science.

For us partnering is key to success in this mission. It is central to our company strategy and forms an integral part of our drug discovery and development efforts.

## Content:

• Cardiovascular	2
• Central Nervous System	4
• Immunology / Inflammation	6
• Metabolism	8
• Oncology	10
• Respiratory	12
• Urology and other Therapeutic Areas	14
• Virology	16
• Technologies	18
• Contacts for Asia / Japan	20
• General Inquiries	22



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# Cardiovascular

Our research, development and marketing of marketed products for cardiovascular diseases are based on solid ground: decades of experience in this therapeutic area allows us to help millions of patients affected by potentially life-threatening diseases. We conduct large global studies to explore further therapeutic potential of our cardiovascular compounds. Indeed, more than 75,000 patients have been enrolled in the past five years.

We seek to expand our own successful cardiovascular franchise of established and new products (e.g. Micardis®, Metalyse®, Pradaxa®) through partnering and external collaborations at all stages of discovery, development and commercialisation.

## Key Areas for Partnering

- “Hypertension plus”: Hypertension and end-organ-protection: renal and/or cardiac (NCEs only)
- End-organ-protection alone: renal and/or cardiac
- Chronic heart failure
- Atherosclerosis-thrombosis
- Atrial fibrillation: complement to our anti-thrombotic programmes (NCEs only)
- Thromboembolic diseases
- Angina and coronary heart disease

## Excluded Areas

- Vaccines
- Antisense
- Gene therapy
- Any type of cardiac assist device; shunts or pacemakers



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# Central Nervous System

Diseases of the central nervous system (CNS) are one of our core therapeutic areas. Our portfolio consists of drugs for the treatment of Parkinson's disease and restless legs syndrome (RLS), as well as for treatment of major depressive disorder and diabetic neuropathic pain.

With products such as Sifrol®/ Mirapex® and Cymbalta®, we are a worldwide leader in Neurology. We are strongly committed to searching for novel therapies in indications such as Alzheimer's disease, Parkinson's disease, and chronic pain.

## **Key Areas for Partnering**

- Alzheimer's disease
- Parkinson's disease
- Chronic pain (nociceptive pain, neuropathic pain)
- Migraine
- Depression

## **Additional Interest**

- Non-Alzheimer / Parkinson, neuro-degenerative disorders, e.g. amyotrophic lateral sclerosis (ALS) and Huntington's disease (HD)
- Anxiety
- Restless legs syndrome (RLS)



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# Immunology / Inflammation

Despite advances in treatment, there remains a large unmet medical need for safe and efficacious treatment of autoimmune diseases. Our drug discovery in these therapeutic areas places an emphasis on gaining a mechanistic understanding of rheumatoid arthritis, multiple sclerosis and psoriasis.

We have extensive expertise and experience in innovative research, pre-clinical and clinical development, as well as formulation and production of both small molecule and protein therapeutics in autoimmune and inflammatory diseases. We are looking for partners who are aiming as well to fill therapeutic gaps in these areas.

## **Key Areas for Partnering**

- Rheumatoid arthritis
- Psoriasis
- Multiple sclerosis

## **Additional Partnering Interest**

- Crohn's disease
- Ulcerative colitis
- Systemic lupus erythematosus (SLE)
- Osteoarthritis: inhibitors of both degenerative changes in cartilage and pain

## **Secondary Priority**

- Compounds with unknown mechanism of action
- Peptides

## **Excluded Areas**

- Prophylactic vaccines
- Antisense
- Gene therapy



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# Metabolism

Our research and development in the area of metabolic diseases have resulted in major achievements, especially in our type 2 diabetes programme. Compounds with different modes of action have now entered clinical development from our diverse portfolio.

We are dedicated to extending this franchise through external partnerships and collaborations at all stages of development in several metabolic indications such as obesity, dyslipidemia/atherosclerosis, type 2 diabetes and diabetic complications.

## Key Areas for Partnering

- Diabetes mellitus type 2
- Dyslipidemia/hyperlipidemia, and atherosclerosis related to lipid disorders
- Obesity, if weight loss superior to sibutramine can be achieved
- 'Metabolic Syndrome' with potential for registration in diabetes and/or dyslipidemia/atherosclerosis, if additional effect beyond weight loss can be achieved
- Diabetic complications (focus on: Nephro-, Neuro-, and Retinopathy)

## Additional Partnering Interest

- Osteoporosis and other endocrine diseases (phase II to market)

## Excluded Areas

- Products for diabetes mellitus type I (only)



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# Oncology

Recent advances in oncology and genome research have widened the scope of opportunities. New treatments with significantly improved treatment success rates may be in sight in the near future. This holds true for our activities in oncology with front-line research and development projects. We have rapidly built up an oncology pipeline with several compounds in clinical phases I-III for a variety of cancer types.

We are looking for partners with the same passion to seek new and better treatment options for patients in oncology.

## Key Areas for Partnering

- All oncological indications:
  - solid tumours
  - hematological tumours

## Excluded Areas

- Antisense
- Gene therapy
- Radio-immunotherapy
- Cellular vaccines
- Viral-mediated approaches
- Toxin-conjugated NBEs

Adjunct/supportive therapy as late stage products (phase IIb/III) will be evaluated on a case by case base.



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# Respiratory

Since 1921 we continue to strive for further innovations in the treatment of airway diseases and ample resources within Boehringer Ingelheim are dedicated in this field. We have a long history of successful research, development and marketing in respiratory diseases (e. g. Spiriva®, Atrovent®, Combivent®). Indeed, we are one of the top four respiratory companies worldwide.

In support of our innovative drugs, our device Respimat® represents a modern new generation of propellant-free inhaler that combines innovative technology with the proven efficacy of e. g. Spiriva® – an important advance for patients with chronic obstructive pulmonary disease (COPD). We aim to further strengthen our existing portfolio of respiratory compounds and devices through in-licensing and external collaborations.

## Key Areas for Partnering

- Controller drug more effective in COPD than steroids
- Treatment and prevention of exacerbations
- Prevention of remodeling/ promotion of lung repair
- Candidates for combination with tiotropium: inhaled, once a day
- Prescription smoking cessation therapies
- Asthma disease modifying therapy
- Controller treatment of severe asthma
- Very safe oral controller treatment for mild asthma
- Pulmonary and cystic fibrosis

## Additional Partnering Interest

- Safe, very broad spectrum agents to increase resistance to infection in the respiratory tract
- Formulation technologies for inhaled drugs
- Respiratory tract device technologies
- Approaches to quantifying inflammatory status, lung repair, exacerbations in trials
- Safe drug to treat pulmonary hypertension
- Disease modifying therapy of rhinitis

## Excluded Areas

- Drugs targeting mechanisms repeatedly investigated with little or no success
- Gene therapy



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## Urology and other Therapeutic Areas

In urology we are recognized for our blockbuster treatment of benign prostatic hyperplasia, Flomax®/Alna®. Licensed from Astellas Pharma it has been marketed successfully by Boehringer Ingelheim and is a good example of our capabilities to market a product beyond our core research areas.

In other therapeutic areas we seek to complement our franchises with selected licensing opportunities based on scientific merit, strategic fit and commercial attractiveness. One such area is hypoactive sexual desire disorder (HSDD), where we are investigating flibanserin in phase III clinical trials for pre-menopausal women suffering from HSDD.

### **Key Areas for Partnering**

#### *Indications (phase I to market)*

- Overactive bladder
- Stress urinary incontinence
- Benign prostatic hyperplasia
- Female sexual dysfunction with focus on hypoactive sexual desire disorder
  
- New opportunities outside key therapeutic areas listed in this booklet

### **Excluded Areas**

#### *MOAs*

- Erectile dysfunction, especially second generation PDE V inhibitors unless there is a major scientific breakthrough



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# Virology

In 1996, we launched Viramune®, a product from our own internal research and the first non-nucleoside reverse transcriptase inhibitor for the treatment of HIV infections. Recently, we introduced Aptivus®, our non-peptic human immunodeficiency virus (HIV) protease inhibitor, licensed from Pharmacia and Upjohn, which offers an important treatment option for HIV patients. In addition, we are very proud that since the inception of our Viramune® Donation Programme over 1 million doses of this drug have been supplied to help the countries most in need to help combat HIV/AIDS.

While our current focus is on HIV and hepatitis C virus (HCV), we are keen to explore potential new indications and therapeutic areas in infectious diseases via our internal research efforts and external collaborations.

## Key Areas for Partnering

- HIV
- HCV
- HBV as a secondary indication for a compound which is driven by a primary indication in HIV or HCV
- HBV only, if compound would cause a paradigm shift
- Antivirals targeting virally encoded functions
- Host proteins enabling virus replication
- Therapeutic vaccines with proven phase II efficacy
- Immunomodifiers with known molecular MOA

## Excluded Areas

- Influenza, HSV, HPV, RSV: unless significant scientific breakthrough
- Parenteral IFNs
- Prophylactic vaccines
- Generalised immunomodulators without defined MOA
- Adjunct therapies (cachexia, secondary infection, etc.)
- siRNA and antisense
- Gene therapy



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# Technologies

Technology licensing supports and enables our research and development activities across all therapeutic areas through partnering and/or licensing of scientifically, medically or commercially relevant technologies. Our Centres of Excellence and Global Skill Centres, for example the functional genomics and compound pool optimisation groups, reflect our commitment to empower our drug discovery and development engine.

Partnerships and/or licensing of technologies can improve the quality, timelines and cost efficiency of our developing portfolio and thus help us to deliver better treatment options to patients.

## Biology and related areas

- Protein scaffold technologies
- Half-life extension technologies
- RNA interference technologies
- Delivery technologies for RNAi (local and systemic)
- Novel approaches for oral delivery of peptides / proteins
- Novel approaches for tissue delivery
- Novel (improved) technologies for target validation
- Early toxicology assessments
- Novel systems biology tools
- Drug efficacy markers (research and clinical)

## Chemistry and lead identification

- Novel in silico screening methodologies
- Innovative chromatography methods
- Nanotechnology for screening
- GPCR purification and screening methods
- Crystal structure and prediction models for GPCR
- Novel chemical synthesis protocols
- Fragment-based screening

## Contacts for Asia / Japan



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Nippon Boehringer Ingelheim was established in 1961. We proactively scout for emerging partnering opportunities in Asia. The information we receive is immediately passed on to the relevant therapeutic licensing teams for evaluation or reference. With regular visits and close interactions with companies in Japan, Korea, India, China, Hong Kong, Taiwan and Singapore we can serve as a regional contact supporting our global partnering activities.



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## General Inquiries

Our vision “Value through Innovation” drives us forward. It helps us to foster value creation in our company and to look to the future with constantly renewed commitment and ambition. To do so, external partnerships and collaborations at all stages of research, development and commercialisation allow us to strengthen continuously our global franchises in all therapeutic areas. Close contacts to key players in the biotechnology and pharmaceutical world such as venture capitalists and other investors are of major importance for us.

# Boehringer Ingelheim

The Boehringer Ingelheim group is one of the world's 20 leading pharmaceutical companies. Headquartered in Ingelheim, Germany, it operates globally with 138 affiliates in 47 countries and 41,300 employees. Since it was founded in 1885, the independent, family-owned company has been committed to researching, developing, manufacturing and marketing novel products of high therapeutic value for human and veterinary medicine. In 2008, Boehringer Ingelheim posted net sales of 11.6 billion euro while spending one fifth of net sales in its largest business segment Prescription Medicines on research and development.

For more information please visit [www.boehringer-ingelheim.com](http://www.boehringer-ingelheim.com)

## Any comments or questions?

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