

BOEHRINGER INGELHEIM

B A C K G R O U N D E R

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- 3. Partnerships to drive innovation**

1. BOEHRINGER INGELHEIM'S COMMITMENT TO CANCER

Cancer is a major global public health problem and despite considerable advances in disease awareness, diagnosis and treatment, it remains an area of significant unmet medical need. Boehringer Ingelheim has a long-term commitment to deliver tomorrow's cancer therapies by discovering and developing novel treatment options that combine ground-breaking science with high therapeutic value for patients.

Boehringer Ingelheim is a leader in research and seeks to constantly improve cancer therapy by applying its scientific discoveries and research advances to develop a wide range of novel therapies in areas of unmet medical need in both solid tumours and haematological malignancies.

More than 400 employees around the world are dedicated to the discovery and development of new cancer treatments: approximately 250 highly skilled and motivated scientists in Vienna, Austria at the dedicated, state-of-the-art Boehringer Ingelheim cancer research centre and more than 200 across the globe associated with oncology research and development. Partnering is also an important part of Boehringer Ingelheim's company strategy and forms an essential part of their drug discovery and development efforts.

They work with the independent Research Institute of Molecular Pathology (IMP) in Austria, mainly sponsored by Boehringer Ingelheim and experts in cancer research and medicine at universities and hospitals around the world, to focus on developing a broad range of breakthrough next generation products to combat cancer.

Boehringer Ingelheim is committed to the clinical development of pioneering treatments for cancer through an extensive and diverse global study programme involving investigators and patients from around the world. This is supported by a significant financial investment from Boehringer Ingelheim, with the aim of developing treatments to make a difference to the lives of patients and their families.

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BACKGROUND

2. RESEARCH AND DEVELOPMENT IN CANCER TREATMENTS

Boehringer Ingelheim is using its significant resources to actively develop targeted therapies based on biologicals and small molecules in areas of unmet medical need, including both solid and haematological cancers. Cutting-edge research conducted at Boehringer Ingelheim's research centre in Vienna and the Research Institute of Molecular Pathology (IMP) has resulted in several promising compounds.



Using technological advances and breakthrough science, Boehringer Ingelheim is proud to have brought two medicines to the market which both contribute towards improving and extending the lives of people with advanced lung cancer:

Afatinib (GIOTRIF®/GILOTRIF®) is approved in a number of markets, including the European Union (EU), Japan, Taiwan and Canada under the brand name GIOTRIF® and in the U.S. under the brand name GILOTRIF® for use in patients with distinct types of EGFR mutation-positive non-small cell lung cancer (NSCLC).

Afatinib is under regulatory review by health authorities in other countries worldwide and is not approved in other indications. Registration conditions differ internationally; please refer to locally approved prescribing information.

Afatinib has been investigated in advanced squamous cell carcinoma (SCC) of the lung and the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA) have both accepted filing applications for afatinib for the treatment of patients with advanced SCC of the lung progressing after treatment with first-line chemotherapy.

Phase III trials in squamous head and neck cancer (HNSCC) and trials in other tumour types are ongoing.

In oncology, **nintedanib** is approved in the EU under the brand name **VARGATEF®**, for use in combination with docetaxel in adult patients with locally advanced, metastatic or locally recurrent NSCLC of adenocarcinoma tumour histology, after first-line chemotherapy. Nintedanib is under regulatory review by health authorities in other countries outside the EU and is currently in Phase III clinical development for patients with colorectal cancer. Trials in various other solid tumours are ongoing.

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Boehringer Ingelheim has a broad oncology portfolio, and is focussed on research and development in the following areas:

- **Signal transduction:** Several new biological entities (NBEs) and new chemical entities (NCEs) from preclinical to Phase III
- **Tumour angiogenesis:** Several NBEs and NCEs from preclinical to Phase III
- **Cell-cycle progression:** Several NCEs from preclinical to Phase III
- **Immunotherapy:** Several NBEs from preclinical to Phase I
- **Regulation of apoptosis:** Several NCEs and NBEs from discovery to preclinical
- **Epigenetic regulation of gene expression:** Several NCEs from discovery to preclinical
- **Protein homeostasis:** Several NCE discovery projects
- **Tumour Initiating Cells and Stem Cell Pathways:** Several NCE and NBE discovery projects

3. PARTNERSHIPS TO DRIVE INNOVATION

The best results are obtained when you partner with the best people. Boehringer Ingelheim believe in long-term partnerships at all stages of research and development to ensure the continued delivery of new, safe and effective treatments for the benefit of patients. More than 50% of Boehringer Ingelheim's early-to-mid stage pipeline is filled with products that are derived from collaborating with external innovators.

In the area of oncology, a large number of collaborations with both academic partners and biotechnology companies help to advance Boehringer Ingelheim's search for novel therapeutic concepts, biomarkers, drug candidates and treatment modalities. Boehringer Ingelheim's unique approach favours truly equal collaborations that are guided by the company's corporate values: respect, trust, empathy and passion.

Ongoing partnerships include:

- Research institutes – such as the Ludwig Institute for Cancer Research
- Pharmaceutical partners – such as Hanmi Pharmaceutical Co., Ltd., Amgen; CureVac; EUREKA



- Boehringer Ingelheim and Hanmi Pharmaceutical Co. Ltd have an exclusive license and collaboration agreement for the development and global commercialisation rights* of HM61713, a novel 3rd generation EGFR targeted investigational compound for the treatment of EGFR mutation positive lung cancer
- This is a significant step towards Boehringer Ingelheim's vision of providing a wide-range of lung cancer treatment options, as we better understand the underlying drivers of this devastating disease.
- It reiterates our commitment towards improving the lives of people with cancer through innovation and tailored treatment options

**except South Korea, China and Hong Kong*

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- Academic institutions – such as Yale; Harvard; University of Toronto

Beyond delivering innovative therapeutics, Boehringer Ingelheim helps organisations to help patients; Boehringer Ingelheim's support enables access to treatment for patients who need it most.