

Roche - leading the way with new approaches to treating cancer

Roche in Oncology – an overview

The Roche Group, including its members Genentech in the United States and Chugai in Japan, is the world's leading provider of cancer treatments which include innovative anti-cancer drugs and diagnostics.

- The Roche oncology portfolio includes five major cancer drugs that have proven survival benefits in a number of different tumor types. These include: Avastin for colorectal, breast, lung and renal cancer; Herceptin for HER-2 positive breast cancer; MabThera for non-Hodgkin's lymphoma; Xeloda for breast, colorectal, colon and stomach cancer and Tarceva for lung and pancreatic cancer. Roche and its partners are continuing to explore the benefits of these leading cancer drugs in important new cancer indications and treatment regimens.
- Roche has one of the most comprehensive oncology research and development pipelines in the industry. Examples of ongoing research include; trials with Avastin to evaluate its use in earlier stage cancers to provide patient benefit before the disease progresses, the use of Herceptin in gastric cancer and research on Roche's newest breast cancer drug, pertuzumab, which has shown very positive results in phase II studies.

In addition to its groundbreaking drugs, Roche is developing new diagnostic tests that will have a significant impact on disease management for cancer patients in the future. With a broad portfolio of tumor markers for prostate, colorectal, liver, ovarian, breast, stomach, pancreas and lung cancer, as well as a range of molecular oncology tests, Roche will continue to be one of the leaders in providing cancer-focused treatments and diagnostics.

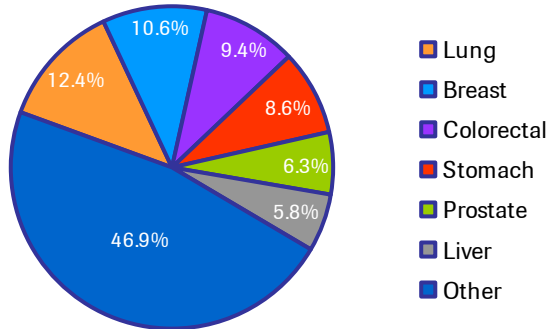
Cancer the global epidemic

Cancer is an abnormal growth of cells that grows and spreads through uncontrolled cell division. These 'malignant' cells may invade other tissues and spread (metastasize) to more distant parts of the body. Cancer is not one disease but a group of more than 100 distinct disorders. It is the world's second biggest killer after cardiovascular disease and was responsible for the death of 7.6 million people in 2005.¹

Globally the number of people diagnosed with cancer is estimated at around 11 million people, a figure that is set to rise to 16 million by 2020.² Of all new cancer cases it is estimated that one third could be cured if they were adequately diagnosed and treated.³

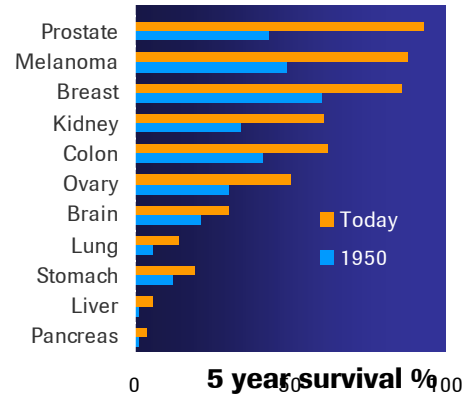
- In Europe alone, one in three people will be affected by cancer in their lifetime³
- In 2002 in the US there were approximately 10.1 million Americans living with a history of cancer.⁴

Table 1. Global incidence of cancer



Worldwide incidence, GLOBOCAN 2005

Table 2. Managing the burden of cancer



Earlier diagnosis and innovative drugs, such as those from Roche, mean more patients are being cured and those with terminal cancer are living longer or receiving effective treatments with fewer side effects. The availability and uptake of new, innovative drugs has resulted in:

- Nearly half (44%) of the observed improvement in the two-year cancer survival rate between 1992 and 2000 at 50 USA centres⁵
- Nearly one third (30%) of the decline in cancer mortality rates seen in 20 countries (including the US and Europe) during the period 1995 – 2003⁵

The future of cancer treatment

Cancer is a complex disease that can affect different people in different ways. Future cancer treatments will rely on the choice of the most appropriate combination of drugs for patients, based on the genetic profile of their tumor. Rapid growth in understanding of the molecular basis of diseases and progress in genomics, genetics and basic cell biology provide new insights into differences amongst patients and disease states. This understanding will allow Roche to develop new diagnostics and more targeted drugs that are more effective and safer. As a leading healthcare company with expertise across treatments and diagnostics Roche is uniquely positioned to create value for both patients and those involved with healthcare delivery, with this 'personalized healthcare' approach.

An overview of Roche's cancer treatments

BC – Breast Cancer; CRC – Colorectal Cancer; NSCLC – Non-Small Cell Lung Cancer; RCC – Renal Cell Cancer; NHL – Non-Hodgkin's Lymphoma; CLL - Chronic lymphocytic leukemia

Avastin® (bevacizumab)	
<p>Avastin is the first anti-cancer therapy to target angiogenesis, the growth of new blood vessels that supplies nutrients and oxygen necessary for cancerous tissues to grow. By preventing the development of blood vessels, Avastin starves tumors of the blood supply crucial to their growth. Avastin is the only anti-angiogenic therapy to have demonstrated improved progression-free and/ or overall survival in the three most common forms of cancer: breast, colorectal and non-small cell lung, as well as in renal cell cancer.</p>	
CRC	<ul style="list-style-type: none"> • Avastin is the only biologic proven to extend survival in first-line metastatic CRC⁶⁻⁸ • Avastin significantly reduces risk of disease progression with all major chemotherapy regimens⁶⁻¹⁰ • Approved in Europe for use in combination with any chemotherapy for first-line and later use in patients with metastatic CRC • Avastin offers significant patient benefits regardless of K-Ras status¹¹
BC	<ul style="list-style-type: none"> • Avastin doubles the chance of patients with locally recurrent or metastatic breast cancer living without their disease advancing (progression-free survival) when used in combination with paclitaxel (a taxane-based chemotherapy)¹² • When used in combination with a taxane, Avastin substantially increases the efficacy of treatment with limited impact on the safety profile¹² • Continual direct VEGF inhibition with Avastin maximizes treatment benefit • Approved in Europe and US for first-line treatment of women with metastatic (HER-2 negative) breast cancer
NSCLC	<ul style="list-style-type: none"> • Avastin based therapy provides patients with the longest survival in first-line NSCLC¹³ • Avastin based therapy allows patients to remain free from progression of their disease for longer^{13,14} • Avastin has a well-known safety profile • Approved in US and Europe for first line treatment of advanced NSCLC
RCC	<ul style="list-style-type: none"> • When used with interferon, Avastin gives patients with advanced RCC the chance to live twice as long without their cancer progressing, compared to interferon use alone¹⁵ • Avastin and lower-dose interferon maintain the clinical benefit^{16,17} • Approved in Europe for first-line treatment of patients with advanced and/ or metastatic RCC in combination with interferon

Herceptin® (trastuzumab)	
<p>A biologically engineered humanized antibody, Herceptin is designed to target and block the function of the HER-2 receptor which is involved in a particularly fast growing and aggressive form of breast cancer (BC) known as HER-2 positive disease.¹⁸ In BC approximately 20 – 30% of tumors over-express HER-2¹⁹ and this is related to poor overall prognosis with faster time to relapse or progression, at all stages of BC.²⁰</p>	
BC	<ul style="list-style-type: none"> • Herceptin delivers high cure rates for women with HER-2 positive early breast cancer^{21, 22} • Herceptin extends survival across all stages of HER-2 positive breast cancer by activating the immune system and suppressing HER-2²³⁻²⁷ • Herceptin is the foundation of care in women with HER-2 positive breast cancer²⁸⁻³¹

MabThera® (rituximab)	
<p>MabThera was the first monoclonal antibody for the treatment of non-Hodgkin's lymphoma (NHL), a group of several closely related cancers that affect the lymphatic system, made up of bone marrow, tonsils, spleen and lymph glands and used as part of the body's natural defenses against infection. MabThera binds to antigens on the surface of abnormal B-cells (a type of white blood cell, which when normal helps to fight disease) and acts like a flag allowing the immune system to recognize them as cancerous cells and to attack and destroy them, as well as inducing cell death and enhancing the efficacy of chemotherapy. Once destroyed, therapy is stopped and the body regenerates normal B-cells, so the immune system is repopulated with normal cells. MabThera is also showing success as a treatment for chronic lymphocytic leukemia (CLL); cancer of the lymphocytes (white blood cells vital to the body's immune system). Failure of lymphocytes to die at the end of their life span leads to a build up of tumor cells.</p>	

NHL	<ul style="list-style-type: none"> In aggressive NHL MabThera significantly increases survival and cure rates³²⁻³⁴ MabThera extends the life and the time free of disease of patients with indolent lymphoma by years through induction and maintenance^{35,36}
CLL	<ul style="list-style-type: none"> MabThera can stop the progression (worsening) of cancer in CLL patients for a longer time than previous treatments and potentially prolong the life of patients with this most common of leukemias³⁷
Xeloda[®] (capecitabine)	
Xeloda is a highly effective targeted oral chemotherapy offering patients a survival advantage when taken on its own or in combination with other anticancer drugs. Xeloda uniquely activates the cancer-killing agent 5-FU (5-fluorouracil) directly inside the cancer cells so avoiding damage to healthy cells. Xeloda tablets can be taken by patients in their own home, offering more flexibility and freedom while replacing the need for intravenous (IV) 5-FU.	
CRC	<ul style="list-style-type: none"> In the treatment of advanced colorectal cancer, Xeloda as a single therapy has demonstrated superior tumor shrinkage, equivalent time to disease progression and equivalent survival as intravenous (IV) 5-FU/FA*^{38,39} Xeloda has also been approved in Europe for the treatment of advanced colorectal cancer that has spread to other parts of the body in combination with any chemotherapy, in all lines of treatment, with or without Avastin⁴⁰
BC	<ul style="list-style-type: none"> In combination with docetaxel, Xeloda successfully fights breast cancer in women whose disease has spread to other parts of the body following intravenous (IV) chemotherapy with anthracyclines⁴¹ Xeloda as a single therapy is also a treatment for patients with breast cancer that has progressed after anthracycline and taxane therapy⁴²⁻⁴⁶
Colon cancer	<ul style="list-style-type: none"> Xeloda as a single therapy offers the same survival benefit as 5-FU/FA*, with a trend towards superior survival for the adjuvant (post-surgery) treatment of colon cancer⁴⁷ Xeloda is approved in Europe & US for adjuvant (post-surgery) treatment of colon cancer^{40,48}
Stomach cancer	<ul style="list-style-type: none"> In stomach cancer, patients treated with Xeloda in combination with platinum-based treatments, live at least as long as those on the previous standard IV 5-FU-based treatments, but with less hospital visits and more flexibility^{49,50} Xeloda is approved for the first line treatment of advanced stomach cancer in Europe in combination with any platinum based chemotherapy⁴⁰

*5-FU/FA = intravenous 5-fluorouracil / folinic acid

Tarceva[®] (erlotinib)	
Tarceva is an oral drug that works by inhibiting the activity of a specific enzyme (tyrosine kinase), part of the human epidermal growth factor receptor (EGFR), a signaling pathway which plays a key role in the formation and growth of numerous cancers. By inhibiting tyrosine kinase Tarceva prevents the continued growth of tumor cells.	
NSCLC	<ul style="list-style-type: none"> Tarceva is the first and only EGFR oral targeted drug proven to allow patients with NSCLC to live longer and better lives. In its landmark registration study, one in three patients (31%) on Tarceva alone, were alive at one year compared to only one out of five (22%) patients not receiving the drug⁵¹
Pancreatic cancer	<ul style="list-style-type: none"> The first new drug in almost ten years to demonstrate statistically significant improvements in survival in patients with advanced pancreatic cancer,⁵² which has a very poor prognosis as it is resistant to other treatment options (chemotherapy and radiotherapy)

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