

VHIO PRESS PACK
TRANSLATIONAL RESEARCH WILL ALLOW THE DEVELOPMENT OF PERSONALIZED TREATMENT FOR CANCER

CANCER TODAY

Every year, some 160,000 Spaniards and 14,000 Catalans are diagnosed with cancer. In the country, as a whole, approximately 90,000 people die from the disease. These figures represent nearly **30% of all causes of death** and cancer is the second cause of death after cardiovascular diseases.

It is also the **leading cause of death** among people in the age of greatest personal and occupational productivity - **between 35 and 70 years of age**. And the numbers are on the rise. In the future, one out of every three Spaniards will develop cancer. Of these, one-quarter will die. Taking the example of breast cancer, there will be a 40% increase in the number of cases between now and 2015.

Furthermore, figures for cancer survival at one year and five years in Spain are similar to those in the United States and Europe. Hence, the numbers are rising but the treatments are improving.

Today, we know much more about why a cell becomes cancerous and about which proteins and genes are responsible for this happening. This knowledge is helping us to develop treatments aimed at the molecular mechanisms that govern each tumor.

- Genomics provides an advance that makes it possible to analyze the **genetic profile of tumors** and, therefore, classify and analyze them.
- Cellular biology allows a better definition of the **differential characteristics of the tumorous cells and tissue** and identification of the molecular bases of cell behavior.
- Finally, **state-of-the-art technologies** have caused a genuine revolution in speeding up diagnosis and accelerating treatment.

These, then, are the principal foundations of “à la carte medicine” or personalized medicine.

TRANSLATIONAL RESEARCH: translating the findings of basic research to clinical practice and vice versa

Translational research is research carried out with patients and is of proven efficacy. It also includes research that is not in the final phase and can generate new working hypotheses, and necessarily takes place within a hospital structure as opposed to the laboratory.

In summary, it involves ensuring the existence of bridges that connect the needs of doctors and patients with the basic research programs. This connectivity becomes an essential factor.

At VHIO, the principal lines of translational research focus on breast cancer, glioblastoma, melanoma and colon cancer.

VHIO: PIONEERING EXPERIENCE

With the aim of responding to the challenges of oncological research, the Vall d'Hebron Institute of Oncology (VHIO) was created in late 2006 on the premises of Vall d'Hebron University Hospital. This distinguishing fact with respect to other research centers ensures access by VHIO researchers to patients and advanced technologies.

The hospital setting also ensures a clinical environment of excellence in the treatment of cancer patients - multidisciplinary clinical facilities with different specialties and clinical teams who are experts in clinical and translational research with basic research teams.

The VHIO Mission

- To ensure **transfer of science to clinical practice** to the benefit of cancer patients.
- To carry out **scientific research of excellence** in all its forms, particularly basic, translational and clinical research.
- To promote **scientific cooperation** among national and international cancer research centers.
- To promote all activities relating to cancer research that contribute to improving the quality of life of people suffering from the disease and of the public in general.

An important novelty of VHIO is that **the weight of the project falls on the clinical research, which will direct the flow of dialogue between the two types of research.**

SCIENTIFIC TEAM

José Baselga, MD

José Baselga is the Chief of Oncology and Hematology and Associate Cancer Center Director at the Massachusetts General Hospital as well as Professor of Medicine at Harvard Medical School. He continues as Scientific Director of the Vall d'Hebron Institute of Oncology (VHIO) at the Vall d'Hebron University Hospital in Barcelona, Spain. He is also a Professor of Medicine at the Universidad Autonoma de Barcelona. He also holds the position of President of SOLTI, the Spanish Breast Cancer Cooperative Group. He is a member of the Editorial Boards of *Cancer*

Cell and *Annals of Oncology*. He is also a Senior Editor of *Clinical Cancer Research*. Dr. Baselga has published over 250 peer-reviewed articles, in addition to over 400 abstracts and book chapters. His research interests are in Clinical Breast Cancer and in Translational and Early Clinical Research in the area of Growth Factor Receptors and Downstream Molecules as Targets for Breast Cancer Therapy. He conducted the initial clinical trials with the monoclonal antibodies cetuximab and trastuzumab. In addition, he has been involved in the clinical development of several new agents including: gefitinib, erlotinib, lapatinib, pertuzumab, m-TOR, PI3K, TGF β , SRC, Insulin-like Growth Factor Receptor Inhibitors and a variety of anti-angiogenic agents. His main focus in the laboratory and in the clinic is the area of novel anti-HER2 agents, in the identification of mechanisms of resistance to anti-HER2 agents and therapeutic approaches to target the PI3K pathway.

Dr. Baselga is the immediate Past President of the European Society of Medical Oncology (ESMO). He is a member of several Committees of the American Association for Cancer Research (AACR) and a member of the AACR Research Council and the AACR Board of Directors; a past member of the Board of Directors of the American Society of Clinical Oncology (ASCO), a past member of the Board of Directors of the European Organization of Research on Treatment of Cancer (EORTC); a member of the Scientific Advisory Committee of the Ludwig Institute for Cancer Research.

Dr. Baselga has received a number of awards including a Young Investigator Award from ASCO (1992), a Career Development Award from ASCO (1994), a Bristol-Myers Squibb Unrestricted Cancer Grant Award (2002-2006), an Honorary Membership Award from The European Society for Therapeutic Radiology and Oncology (ESTRO) (2004); the Waun Ki Hong Visiting Professorship at U.T.M.D. Anderson Cancer Center in Houston, TX (2002); named Distinguished Alumnus from Memorial Sloan Kettering Cancer Center, NY (2004); Elected Member of the American Society of Clinical Investigation (2004); Annual Award from ESMO (2005); American-Italian Cancer Foundation (AICF) Prize for Scientific Excellence in Medicine (2007); AACR-Rosenthal Family Foundation Award (2008); King James I Award (2008); and Queen Sofia Spanish Institute's Gold Medal (2010).

Dr. Baselga received his M.D. degree from the Universidad Autonoma of Barcelona in 1982. He did his Internal Medicine Residency at both Vall d'Hebron University Hospital in Barcelona, Spain and the State University of New York in the US. He completed a fellowship in Medical Oncology at Memorial Sloan-Kettering Cancer Center in New York and subsequently stayed on as a faculty member of the Breast Medicine Service at Memorial Sloan-Kettering until 1996 when he returned to Spain.

RESEARCH PROGRAMS

The scientific activity of the Foundation is organized in two major areas: Clinical Research and Basic Research. The two areas are managed by the Director of Basic Research and the Director of Clinical Research, who both report to the Scientific Director of the Foundation.

Each director is responsible for several programs or research groups, each with their own principal investigator.

Basic research, consisting of the following groups:

Growth Factors Laboratory

Study of the role of certain signal transduction pathways in the development of cancer.

Group Leader: Joaquín Arribas López

Proteomics Laboratory

The Proteomics Laboratory provides services to research groups on latest-generation proteomics methodologies.

Group Leaders: Francesc Canals

Gene Expression and Cancer Laboratory

The research focuses on the study of glioma, the most common and aggressive brain tumor, and works with cell cultures and with mouse models of glioma.

Group Leader: Joan Seoane

Stem Cells and Cancer Laboratory

Study of the molecular mechanisms that control the onset and progress of epithelial and colorectal tumors.

Group Leader: Héctor G. Palmer

Tumor Biomarkers Laboratory

Discovery of Secreted Tumor-specific Biomarkers in Breast Cancer by Proteomics, establishment of Secreted Pathway-activation proteomic signatures from signaling pathways linked to tumorigenesis and, characterization of the tumor microenvironment by the proteomic profiling of secretomes.

Group Leader: Josep Villanueva

Cancer Genomics Laboratory

Development of cancer is driven by the acquisition of somatic genetic alterations, therefore, characterization of the genomic landscape of tumor genomes is a demanding yet extremely relevant effort.

Group Leader: Ana Vivancos

Clinical research consisting of the following programs:

VHIO's quality clinical research is accredited with different phase I, II and III clinical trial units with the aim of providing patients access to new drugs undergoing clinical evaluation of efficacy. The current clinical research programs are the following:

Breast Cancer

Development of a program to provide patients with the opportunity to receive the latest treatments in research (phase I, II and III clinical trials)

Group Leader: Javier Cortés

Molecular Pathology

The program has a wide range of diagnostic and prognostic tests and consultation services in tumor pathology, hemopathology, detection of microorganisms, human genetics and diagnosis of infectious diseases.

Group Leader: Santiago Ramón y Cajal

Head, Neck and Gynecological Tumors Program

The unit participates, as principal investigator or collaborator, with other departments of Vall d'Hebron University Hospital and with other national and international groups. The groups with the greatest participation in its projects are maxillofacial surgery, ENT, gynecology and pathology. **Group Leader: José M. del Campo**

Gastrointestinal Tumors Program

This program is dedicated to improving knowledge of the prognostic and predictive factors of response and efficacy in different gastrointestinal cancers.

Group Leader: Josep Taberner

Genitourinary Tumors Program

This program is dedicated to promoting participation in its own and international multicenter clinical research trials, in all phases.

Group Leader: Joan Carles

Lung Cancer Program

Development of new chemotherapy agents, drugs aimed at EGFR, angiogenesis-inhibiting drugs, multidisciplinary treatments in patients with operable lung cancer and analysis of predictive factors of response/survival.

Group Leader: Enriqueta Felip

Experimental Therapeutics Program

Development of new therapies by means of preclinical studies and phase I trials. The program works closely with the other organ-based research units.

Group Leader: José Baselga

High Risk and Cancer Prevention Program

Identification of individuals at risk of hereditary cancer.

Group Leader: Judith Balmaña

Oncogenetics Program

Group Leader: Orland Diez

Radiation Oncology Program

Development and application of concurrent chemotherapy and radiotherapy, clinical applications of targeted agents with radiation and clinical application of new technologies and quality control.

Group Leader: Jordi Giral

For more information, please contact:

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