

**2010**

**Preliminary report**  
**Avançament memòria**  
**Avance memoria**

# 2010

## Presentation

## Presentació

## Presentación



### A passion for quality research

Passió per la recerca de qualitat

Pasión por la investigación de calidad

The Bellvitge Biomedical Research Institute (IDIBELL) is the centre that manages the research carried out by professionals working at Bellvitge University Hospital, Duran i Reynals Hospital (ICO), and the Bellvitge Campus of the University of Barcelona. IDIBELL is supported by the Catalan Institute of Health (ICS), the Catalan Institute of Oncology (ICO), the University of Barcelona, and the Institute for Diagnostic Imaging. IDIBELL is strategically located in Biopol'H, a science and health park in L'Hospitalet de Llobregat.

IDIBELL is a young institution nourished by the experience of the research institutions that were its predecessors on the Bellvitge Campus, one of the areas of Spain with the highest level of academic and clinical excellence. In this setting, IDIBELL has the opportunity to carry out research activities aimed at solving health problems. IDIBELL's research activity has grown considerably, and currently it is the second most important health research institute in Spain.

In 2010, IDIBELL continued to pursue its commitment to quality research aimed at improving people's health. Researchers at the Institute continued to publish in the best scientific journals and participate in leading national and international research projects.

The Institute set up a department to promote knowledge transfer to ensure that the results of work done by its researchers are applied. This work depends on the collaboration of many other institutions. In this regard, in 2010 IDIBELL strengthened its institutional agreements and was integrated into new research networks. In the field of clinical trials, IDIBELL strengthened its participation in CAIBER (Consortium to Support Biomedical Research Network). The Institute also participates in the Health Universitat de Barcelona Campus (HUBc), which is accredited as an International University Campus by the Spanish Government.

In 2010, IDIBELL continued work on the Biobank project, which will become one of the largest sample collections in Spain. Biobanks are essential resources to carry out research with a high scientific and social impact, and this is one of the institution's main strategic projects.

This year, IDIBELL began to define its strategic plan for the coming years and rethink its research areas. The development of the plan involves the participation of the Institute's researchers. IDIBELL is also firmly committed to quality management and has started to adapt support services for accreditation under ISO standards.

The overview provided here presents the main highlights of 2010. Please take a moment to read through it, and feel free to visit our website for more information.

**Emilià Pola**

IDIBELL General Manager

**In 2010, IDIBELL researchers continued to publish in the best scientific journals and participate in leading national and international research projects**

**L'any 2010, els investigadors de l'IDIBELL han continuat publicant en les millors revistes científiques i liderant projectes nacionals i internacionals rellevants**

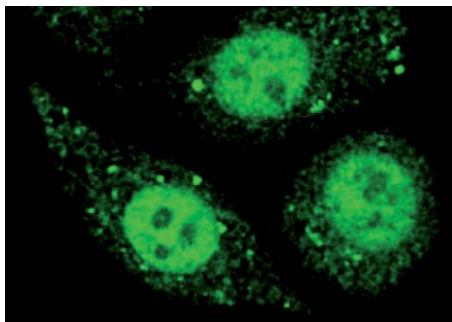
**El año 2010, los investigadores del IDIBELL han continuado publicando en las mejores revistas científicas y liderando proyectos nacionales e internacionales relevantes**

# 2010

## News

### Notícies

### Noticias



#### **Cancer cells hijack and inactivate tumour molecules within their own core**

**Les cèl·lules del càncer segresten i inactiven molècules antitumorals dins dels seus propis nuclis**

**Las células del cáncer secuestran e inactivan moléculas antitumorales dentro de sus propios núcleos**

In a subgroup of tumours of the colon, stomach and uterus, cancer cells hijack a group of anti-tumour molecules within their core, preventing them from maturing and performing their function in the cell, according to a study conducted by the Cancer Epigenetics and Biology programme at IDIBELL and published in the journal *Cancer Cell*.

Researcher Manel Esteller, the coordinator of the study, explains that “these results have implications for improving our understanding of the causes of cancer, but also for possible new treatments. There are two reasons for this: first, we’ve discovered a new, previously unknown way in which cancer cells are altered; and second, there’s a new molecular target, which should stimulate the search for new drugs that improve the transport of molecules from the nucleus.”



#### **Paper published by IDIBELL researchers is the world’s most influential in biology, according to Science Watch**

**Un article publicat per investigadors de l’IDIBELL és el més influent del món en Biologia, segons Science Watch**

**Un artículo publicado por investigadores del IDIBELL es el más influyente del mundo en Biología, según Science Watch**

A study carried out by researchers at IDIBELL is the most frequently cited in the biology category, according to Thomson Reuters’ Science Watch ranking for November and December 2010. The number of times an article is cited in other papers indicates its influence in science. The article “Antiangiogenic therapy elicits malignant progression of tumours to increased local invasion and distant metastasis”, based on research led by the researcher Oriol Casanovas, was published in the March 2009 issue of *Cancer Cell*.



#### **Mechanism that explains the common properties of stem cells and cancer cells identified**

**Identificat un mecanisme que explica les propietats comunes entre les cèl·lules mare i les cèl·lules canceroses**

**Identificado un mecanismo que explica las propiedades comunes entre las células madre y las células cancerosas**

A study published in the journal *Proceedings of the National Academy of Sciences (PNAS)* identifies a mechanism that explains the common properties shared by stem cells and cancer cells. The work was done by the Cancer Epigenetics Research Group, led by Manel Esteller, an ICREA researcher at IDIBELL.

# 2010

## News

### Notícies

### Noticias



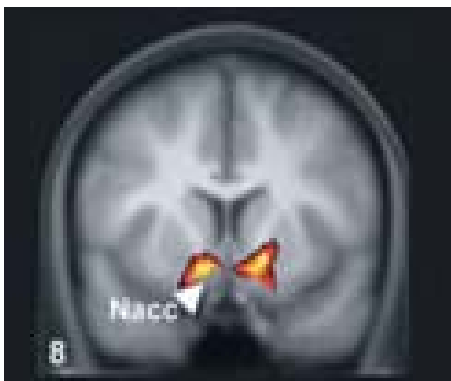
#### **AECC promotes research on hereditary cancer at IDIBELL**

**La AECC impulsa la recerca en càncer hereditari de l'IDIBELL**

**La AECC impulsa la investigación en cáncer hereditario del IDIBELL**

The Scientific Foundation of the Spanish Association Against Cancer (AECC) has awarded €1.2 million for research on hereditary cancer at IDIBELL. The grant was given to the project "Hereditary cancer: towards an accurate estimate of risk", led by Gabriel Capellá, IDIBELL scientific director and director of the Hereditary Cancer Programme of the Catalan Institute of Oncology (ICO) and IDIBELL.

The project also involved the ICO's Cancer Prevention Programme, the Medical Oncology Service at ICO L'Hospitalet de Llobregat, Bellvitge University Hospital (Jordi Ponce and Sebastiano Biondo), and the Institute of Predictive and Personalized Medicine of Cancer (IMPPC).



#### **Response to monetary gain or loss is determined by brain structure**

**La resposta davant dels guanys o les pèrdues monetàries està condicionada per l'estructura del cervell**

**La respuesta ante de las ganancias o las pérdidas monetarias está condicionada por la estructura del cerebro**

A great deal of human behaviour is conditioned by mechanisms of reward and punishment, but each person reacts differently to these stimuli. In fact, there are people who are more likely to seek rewards or pleasures while others show stronger tendencies to avoid losses or negative life events.

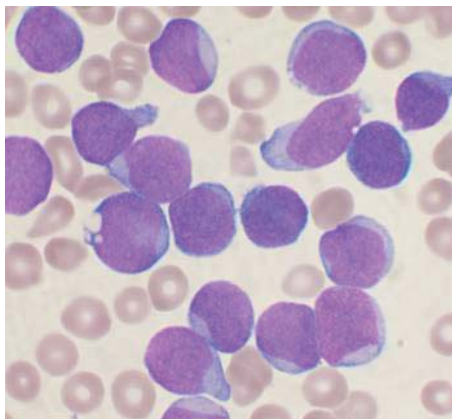
The reason for these individual differences lies in the connections of a specific brain area, according to a study published in *The Journal of Neuroscience*. The work involved Estela Cámara and Antoni Rodríguez Fornells (ICREA researcher), researchers from the Bellvitge Biomedical Research Institute (IDIBELL) and the Department of Basic Psychology at the University of Barcelona. The research results provide new evidence on individual differences observed in terms of how people can be more or less likely to seek rewards or pleasures or avoid negative or unpleasant situations.

# 2010

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## Notícies

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### **New data validate effectiveness of a new treatment for leukaemia**

**Noves dades validen l'eficàcia d'un tractament contra les leucèmies**

**Nuevos datos validan la eficacia de un tratamiento contra las leucemias**

A new drug for chronic lymphocytic leukaemia and other blood cancers, known as AICAR (5-aminoimidazole-4-carboxamide riboside), could be a therapeutic alternative for patients with chronic lymphocytic leukaemia, according to research published in the journal *Blood*. The study elucidated the mechanism of action of the drug.

AICAR is the first therapeutic molecule against cancer patented by a Spanish public centre to have reached the clinical trial stage. The drug was developed in 2003 by researchers with IDIBELL's Apoptosis and Cancer Group and the Department of Physiological Sciences II, University of Barcelona (UB), led by Joan Gil. In 2004, the company Advacell acquired the right to develop and commercialize the product, which is being produced under the trade name Acadra™.

## THE LANCET

### Oncology

### **Pathological complete response predicts a better prognosis in advanced rectal cancer**

**La resposta patològica completa prediu un millor pronòstic en càncer de recte avançat**

**La respuesta patológica completa predice un mejor pronóstico en cáncer de recto avanzado**

The complete disappearance of cancer cells is the best prognostic factor in locally advanced rectal cancer, according to a study published in the latest issue of the journal *Lancet Oncology*. One of the authors is Sebastiano Biondo, IDIBELL researcher and head of the Colorectal Unit of Bellvitge University Hospital.

According to the study, among patients with locally advanced rectal cancer treated with a combination of chemotherapy and radiotherapy and subsequent surgery, the complete disappearance of detectable cancer cells (known as pathologic complete response) after treatment is related to better long-term outcomes than those observed when pathological complete response is not achieved. Patients with pathological complete response survive more years without disease and have less risk of metastasis.

# 2010

## People

### Persones

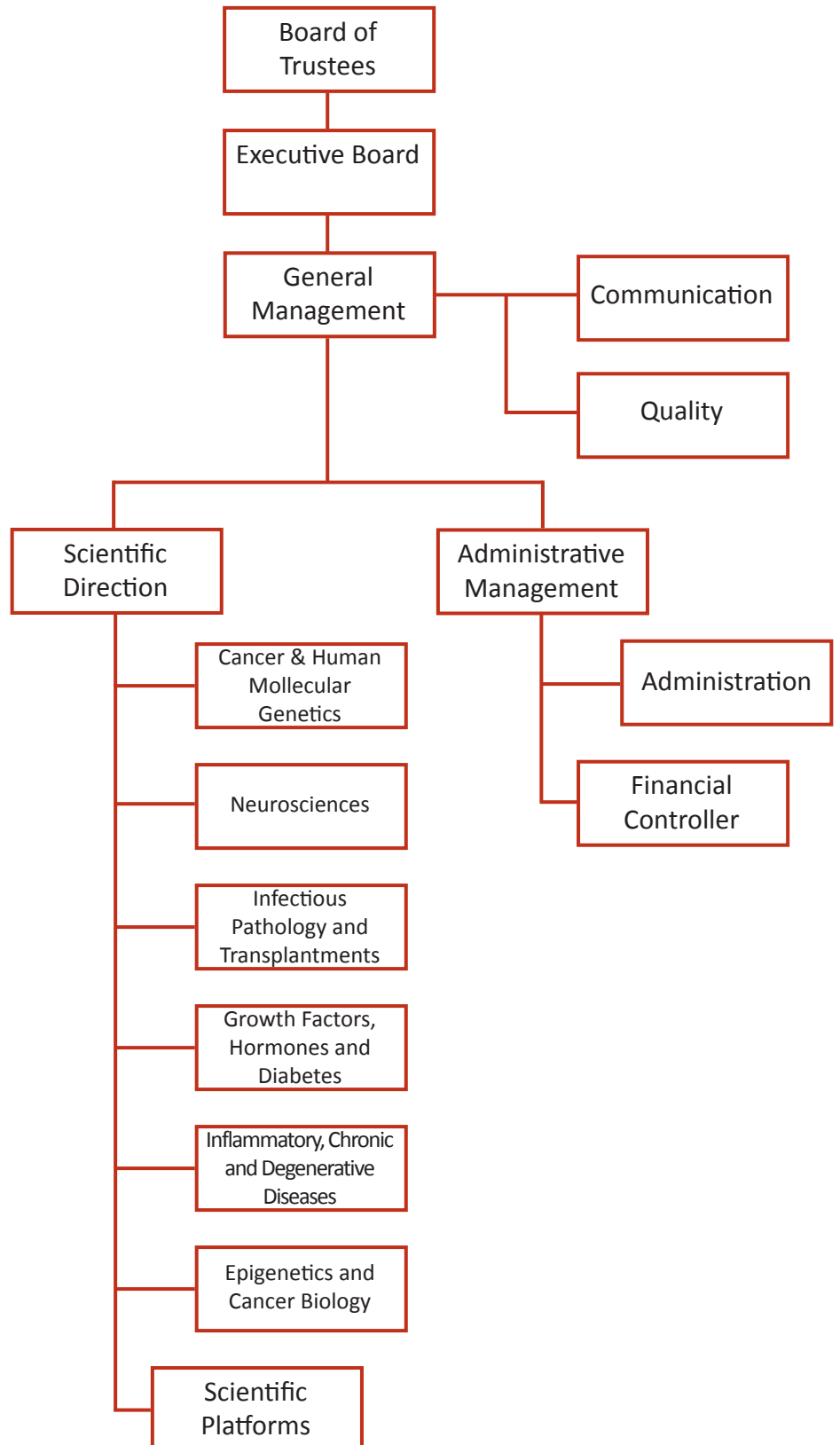
### Personas



**IDIBELL comprises more than 900 people. Half of them are employed by the Institute and the rest are attached researchers, employed by partners.**

**L'IDIBELL està format per més de 900 persones, de les quals la meitat estan contractades per l'institut i la resta són investigadors adscrits, contractats per institucions sòcies**

**El IDIBELL está formado por más de 900 personas, de las cuales la mitad están contratadas por el instituto y el resto son investigadores adscritos, contratados por otras instituciones socias**



# 2010

## Activity

## Activitat

## Actividad



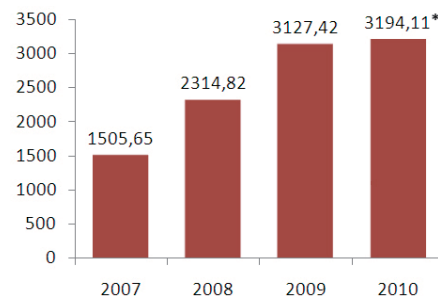
### Scientific production

### Producció científica

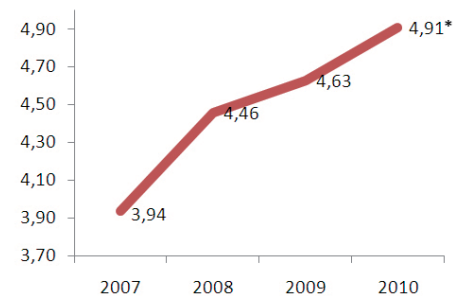
### Producción científica

Scientific publications, indexed with IF*	650
Total impact factor*	3194.11
Average impact factor*	4.91
Projects and current research grants (31st December)	421
Ongoing clinical trials (31st December)	371
R&D contracts	65
Patent applications	2
Licence agreements (out)	1

### Total impact factor evolution



### Average impact factor evolution



\*Provisional data

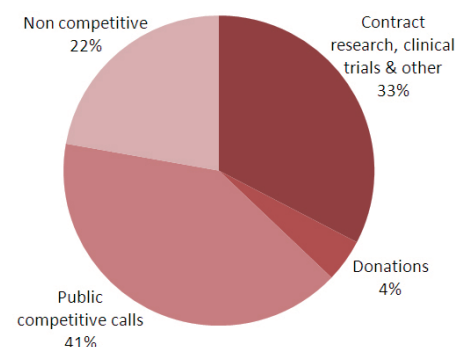
### Income structure

### Estructura d'ingressos

### Estructura de ingresos

IDIBELL receives the most important part of its financing from competitive sources. The budget for 2010 was of around 23 millions of euros. The average time of funded projects is 3.5 years.

The non-competitive part is the funding provided by the Government and other partners. This income structure has not changed significantly over the last two years.



# 2010

## Activity

## Activitat

## Actividad



MARIONA FONT-LLITJOS

### 20 most representative articles

### 20 articles més representatius

### 20 artículos más representativos

Melo, SA; Moutinho, C; Ropero, S; Calin, GA; Rossi, S; Spizzo, R; Fernandez, AF; Davalos, V; Villanueva, A; Montoya, G; Yamamoto, H; Schwartz, S; Esteller, M.

[A Genetic Defect in Exportin-5 Traps Precursor MicroRNAs in the Nucleus of Cancer Cells.](#)

Cancel Cell

Pardo, Y; Guedea, F; Aguiló, F; Fernandez, P; Macias, V; Marino, A; Hervas, A; Herruzo, I; Ortiz, MJ; de Leon, JP; Craven-Bratle, J; Suarez, JF; Boladeras, A; Pont, A; Ayala, A; Sancho, G; Martinez, E; Alonso, J; Ferrer, M

[Quality-of-Life Impact of Primary Treatments for Localized Prostate Cancer in Patients Without Hormonal Treatment](#)

Journal of Clinical Oncology

Duarte, RF; Canals, C; Onida, F; Gabriel, IH; Arranz, R; Arcese, W; Ferrant, A; Kobbe, G; Narni, F; Deliliers, GL; Olavarria, E; Schmitz, N; Sureda, A

[Allogeneic Hematopoietic Cell Transplantation for Patients With Mycosis Fungoides and Sezary Syndrome: A Retrospective Analysis of the Lymphoma Working Party of the European Group for Blood and Marrow Transplantation](#)

Journal of Clinical Oncology

de Sanjose, S; Quint, WGV; Alemany, L; Geraets, DT; Klaustermeier, JE; Lloveras, B; Tous, S; Felix, A; Bravo, LE; Shin, HR; Vallejos, CS; de Ruiz, PA; Lima, MA; Guimera, N; Clavero, O; Alejo, M; Llombart-Bosch, A; Cheng-Yang, C; Tatti, SA; Kasamatsu, E; Iljazovic, E; Odida, M; Prado, R; Seoud, M; Grce, M; Usubutun, A; Jain, A; Suarez, GAH; Lombardi, LE; Banjo, A; Menendez, C; Domingo, EJ; Velasco, J; Nessa, A; Chichareon, SCB; Qiao, YL; Lerma, E; Garland, SM; Sasagawa, T; Ferrera, A; Hammouda, D; Mariani, L; Pelayo, A; Steiner, I; Oliva, E; Meijer, CJLM; Al-Jassar, WF; Cruz, E; Wright, TC; Puras, A; Llave, CL; Tzardi, M; Agorastos, T; Garcia-Barriola, V; Clavel, C; Ordi, J; Andujar, M; Castellsague, X; Sanchez, GI; Nowakowski, AM; Bornstein, J; Munoz, N; Bosch, FX

[Human papillomavirus genotype attribution in invasive cervical cancer: a retrospective cross-sectional worldwide study](#)

Lancet Oncology

Castellsague, E; Gonzalez, S; Guino, E; Stevens, KN; Borrás, E; Raymond, VM; Lazaro, C; Blanco, I; Gruber, SB; Capella, G

[Allele-Specific Expression of APC in Adenomatous Polyposis Families](#)

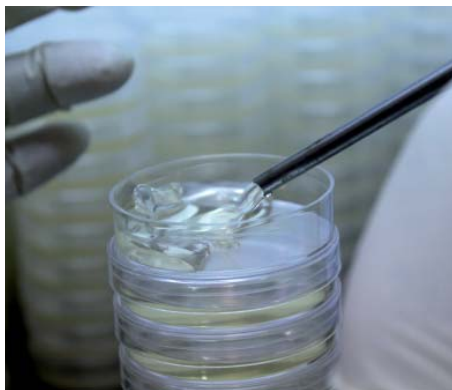
Gastroenterology

Javierre, BM; Fernandez, AF; Richter, J; Al-Shahrour, F; Martin-Subero, JI; Rodriguez-Ubreva, J; Berdasco, M; Fraga, MF; O'Hanlon, TP; Rider, LG; Jacinto, FV; Lopez-Longo, FJ; Dopazo, J; Forn, M; Peinado, MA; Carreno, L; Sawalha, AH; Harley, JB; Siebert, R; Esteller, M; Miller, FW; Ballestar, E

[Changes in the pattern of DNA methylation associate with twin discordance in systemic lupus erythematosus](#)

Genome Research

# 2010 Activity Activitat Actividad



MARIONA FONT-LLITJOS

Santidrian, AF; Gonzalez-Girones, DM; Iglesias-Serret, D; Coll-Mulet, L; Cosialls, AM; de Frias, M; Campas, C; Gonzalez-Barca, E; Alonso, E; Labi, V; Viollet, B; Benito, A; Pons, G; Villunger, A; Gil, J

**AICAR induces apoptosis independently of AMPK and p53 through up-regulation of the BH3-only proteins BIM and NOXA in chronic lymphocytic leukemia cells**  
Blood

Caro-Maldonado, A; Tait, SWG; Ramirez-Peinado, S; Ricci, JE; Fabregat, I; Green, DR; Munoz-Pinedo, C

**Glucose deprivation induces an atypical form of apoptosis mediated by caspase-8 in Bax-, Bak-deficient cells**  
Cell Death and Differentiation

Schluter, A; Real-Chicharro, A; Gabaldon, T; Sanchez-Jimenez, F; Pujol, A

**PeroxisomeDB 2.0: an integrative view of the global peroxisomal metabolome**  
Nucleic Acids Research

Aguilar, H; Sole, X; Bonifaci, N; Serra-Musach, J; Islam, A; Lopez-Bigas, N; Mendez-Pertuz, M; Beijersbergen, RL; Lazaro, C; Urruticoechea, A; Pujana, MA

**Biological reprogramming in acquired resistance to endocrine therapy of breast cancer**  
Oncogene

Garcia-Vidal, C; Ardanuy, C; Tubau, F; Viasus, D; Dorca, J; Linares, J; Gudiol, F; Carratala, J  
**Pneumococcal pneumonia presenting with septic shock: host- and pathogen-related factors and outcomes**

Thorax

Lopez-Sola, M; Pujol, J; Hernandez-Ribas, R; Harrison, BJ; Contreras-Rodriguez, O; Soriano-Mas, C; Deus, J; Ortiz, H; Menchon, JM; Vallejo, J; Cardoner, N

**Effects of Duloxetine Treatment on Brain Response to Painful Stimulation in Major Depressive Disorder**

Neuropsychopharmacology

Rodriguez-Nieto S, Cañada A, Pros E, Pinto AI, Torres-Lanzas J, Lopez-Rios F, Sanchez-Verde L, Pisano DG, Sanchez-Céspedes M.

**Massive parallel DNA pyrosequencing analysis of the tumor suppressor BRG1/SMARCA4 in lung primary tumors.**

Human Mutation

Durrbach, A; Pestana, JM; Pearson, T; Vincenti, F; Garcia, VD; Campistol, J; Rial, MD; Florman, S; Block, A; Di Russo, G; Xing, J; Garg, P; Grinyo, J

**A Phase III Study of Belatacept Versus Cyclosporine in Kidney Transplants from Extended Criteria Donors (BENEFIT-EXT Study)**

American Journal of Transplantation

Gomez, A; Ferrer, I

**Involvement of the cerebral cortex in Parkinson disease linked with G2019S LRRK2 mutation without cognitive impairment**

Acta Neuropathologica

Guedan, S; Rojas, JJ; Gros, A; Mercade, E; Cascallo, M; Alemany, R

**Hyaluronidase Expression by an Oncolytic Adenovirus Enhances Its Intratumoral Spread and Suppresses Tumor Growth**

Molecular Therapy

# 2010

## Activity

## Activitat

## Actividad



Rodríguez-Carballo E, Ulsamer A, Susperregui AR, Manzanares-Céspedes C, Sánchez-García E, Bartrons R, Rosa JL, Ventura F.

**Conserved regulatory motifs in osteogenic gene promoters integrate cooperative effects of canonical Wnt and BMP pathways.**

Journal of Bone and Mineral Research

Regidor, E; Gutierrez-Fisac, JL; Ichaso, MD; Fernandez, E

**Trends in principal cancer risk factors in Spain**

Annals of Oncology

Duell, EJ; Travier, N; Lujan-Barroso, L; Boutron-Ruault, MC; Clavel-Chapelon, F; Palli, D; Krogh, V; Mattiello, A; Tumino, R; Sacerdote, C; Rodriguez, L; Sanchez-Cantalejo, E; Navarro, C; Barricarte, A; Dorronsoro, M; Khaw, KT; Wareham, N; Allen, NE; Tsilidis, KK; Bueno-De-Mesquita, HB; Jeurnink, SM; Numans, ME; Peeters, PHM; Lagiou, P; Valanou, E; Trichopoulou, A; Kaaks, R; Lukanova-McGregor, A; Bergman, MM; Boeing, H; Manjer, J; Lindkvist, B; Stenling, R; Hallmans, G; Dahm, CC; Overvad, K; Olsen, A; Tjonneland, A; Bakken, K; Lund, E; Jenab, M; McCormack, V; Rinaldi, S; Michaud, D; Mouw, T; Nesi, G; Carneiro, F; Riboli, E; Gonzalez, CA

**Menstrual and Reproductive Factors, Exogenous Hormone Use, and Gastric Cancer Risk in a Cohort of Women From the European Prospective Investigation Into Cancer and Nutrition**

American Journal of Epidemiology

Sancho, P; Fabregat, I

**NADPH Oxidase NOX1 Controls Autocrine Growth of Liver Tumor Cells through Up-regulation of the Epidermal Growth Factor Receptor Pathway**

Journal of Biological Chemistry

# 2010

## Who we are

## Qui som

## Quiénes somos



MARIONA FONT-LLITJOS



MARIONA FONT-LLITJOS

**IDIBELL is a research centre focused on cellular medicine, where the high level basic research focuses and works on relevant clinical matters and the economic development**

**IDIBELL és un centre de recerca en medicina cel·lular on la investigació bàsica d'alt nivell està al servei de preguntes clíniques rellevants i del desenvolupament econòmic**

**IDIBELL es un centro de investigación en medicina celular donde la investigación básica de alto nivel está al servicio de preguntas clínicas relevantes y del desarrollo económico**

### Our research

### La nostra recerca

### Nuestra investigación

#### **Cancer and Human Molecular Genetics**

Cancer Virotherapy | Cell Death Regulation | Virus and Cancer | Hereditary Cancer | Biological Clues of the Invasive and Metastatic Phenotype | Cancer Control and Prevention | Hematopoietic and Lymphoid Tumours | Clinical Research, Applied Radiobiology and Experimental Radiotherapy | Nutrition, Environment and Cancer | Sarcomas | Colorectal Cancer | Apoptosis and Cancer | Human Molecular Genetics | Palliative Care | Breast Cancer | Chemoresistance and Predictive Factors to Tumour Response and Stromal Microenvironment | Tumour Angiogenesis

#### **Neurosciences**

Neurologic Diseases and Neurogenetics | Neurometabolic Diseases | Cognition and Brain Plasticity | Neuropathology | Toxicity of Sensorial and Motor Systems | Psychiatry and Mental Health | Neuropharmacology and Pain | Perisurgical Physiopathology and Pain | Cellular and Molecular Neurobiology

#### **Infectious Pathology and Transplants**

Nephrology and Renal Transplantation | Infectious Disease and Microbial Drug Resistance | New Therapies on Genes and Transplantation

#### **Growth Factors, Hormones and Diabetes**

Diabetes, Nutrition and Endocrinological Diseases | Nutrition, Metabolism and Gene Therapy | Growth Factors and Cellular Differentiation

#### **Inflammatory, Chronic and Degenerative Diseases**

Pneumology | Digestive Tract Pathology | Hepato-biliary-pancreatic Pathology | Cardiovascular Diseases | Image Diagnosis and Nuclear Medicine | Cardiovascular Diseases | Head and Neck Diseases | Odontological and Maxillofacial Pathology and Therapeutics | Robotics Surgery | Synovial Inflammation and Bone Metabolism | Clinical Prevention

#### **Epigenetics and Cancer Biology**

Cancer Epigenetics | Genes and Cancer | Chromatin and Disease | Ageing and Cancer | Genomic Imprint and Cancer | Transformation and Metastasis | Cell Cycle | Chromatin Biology | Cellular Differentiation

# 2010 IDIBELL



**Generalitat  
de Catalunya**



**ICO**  
Institut Català d'Oncologia



**Bellvitge**  
Hospital Universitari



**Institut Català  
de la Salut**



**U**  
UNIVERSITAT DE BARCELONA  
**B**



**IDI**  
INSTITUT DE  
DIAGNÒSTIC PER  
LA IMATGE

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