

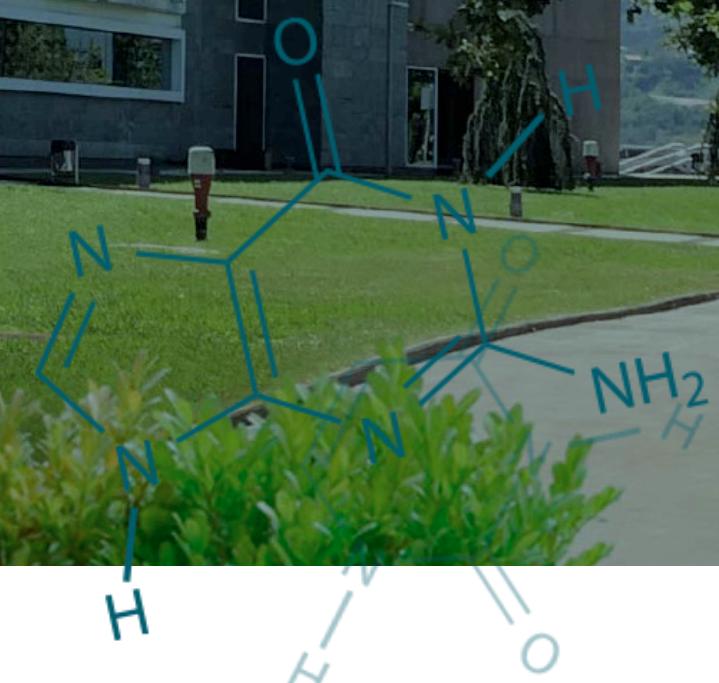
# Activity Report 2018

CICbioGUNE

CENTER FOR COOPERATIVE RESEARCH IN BIOSCIENCES



EXCELENCIA  
SEVERO  
OCHOA





## Strategic Challenges:

- Research Excellence
- Technology Transfer
- Collaboration with RVCTI agents
- International recognition
- Training and promotion of research talent
- Attraction and retention of talent
- Communication and Outreach
- Excellence in Management

## Mission:

Conducting research of excellence in the field of the life sciences, covering the entire value of R&D&i, including technology transfer and commercial exploitation of the generated scientific results.



## Strategy:

Commitment to specialization and excellence



## Competitiveness:

- Leading infrastructure
- Human Resources
- Technical and administrative support
- Competitive salaries
- Goal-Fulfillment Incentives



# Staff 2018



Staff 2018.12.31: **195**

Average Age: **37.6** years

Permanent staff: **47%**



**56.9%** Female

**111**

**43.1%** Male

**84**

**2.6%** Male

**5**

**195** Total CIC bioGUNE Personnel

**83.6%** Research

**163**

**16.4%** Administration and services

**32**

## Research distribution by Professional Category

	nº	%	♀	♂
<b>Researchers</b>	<b>116</b>	<b>71,2</b>	<b>55</b>	<b>61</b>
• Principal Investigators / Platform Managers	26	16,0	7	19
• Postdoctoral Researchers / Research Assistant / Specialist	40	24,5	17	23
• PhD Student	50	30,7	31	19
<b>Technicians</b>	<b>47</b>	<b>28,8</b>	<b>37</b>	<b>10</b>

## Researcher distribution by Origin

- Spain 87
- Italy 10
- Portugal 1
- Austria 2
- United Kingdom 1
- Holland 1
- Albania 1
- Germany 2
- Czech Republic 1
- America 6
- Asia 2



**75%** Spanish

**87** researchers

**16.4%** Rest of Europe

**19** researchers

**6%** America

**7** researchers

**2.6%** Asia

**3** researchers

# Training



**3** Trabajos Fin de Grado



**12** Trabajos Fin de Master



**4** Erasmus



**9** Formación Profesional



**12** Prácticas Formativas de Grado



## Technology transfer and innovation 2018



New Patent Applications: **8**

New Collaboration Agreements: **19**

New Research Contracts: **11**

**2** New Patents:

CA 2.807.17  
CA 2.991.91

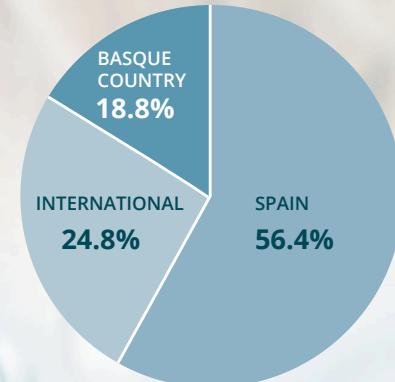
**1** Licensing Agreement

Economic Activity: **2.326.057€**

Basque Country: **18.8 %**

Spain: **56.4 %**

International: **24.8 %**



**8** New Patent Applications

**5** European Patent Application

**2** PCT Patent Application

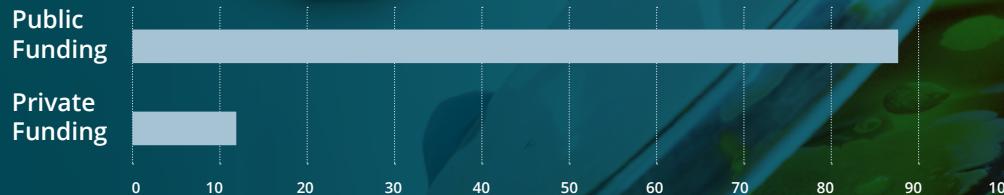
**1** PTO Patent Application

# Funding 2018



Total 2017 R&D Budget: **14.168 million €**

N. R&D Projects: **74**



**80.9% Public Funding**

**19.1% Private Funding**

**TOTAL: 66% competitive + 34% non-competitive**

**49,6% Basque Government Departments**

**6.057 K€**

**22.1% MINECO & MEDC (Spanish Government)**

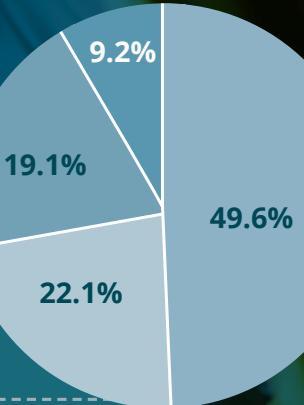
**2.533 K€**

**19.1% R&D Contracts, Research Services & Others**

**1.376 K€**

**9.2% EU & International Projects**

**1.040 K€**



## R&D&I good practices



### R&D Policy

The CIC bioGUNE R&D policy lays on fundamental pillars of **Excellent Research in biosciences and Technology Transfer**. Our activities are devoted to generation of knowledge and transfer of technologies to society and centered in specialization and excellence.

Our R&D activities follow central aspects like:

- **High impact of research activities** focused on ameliorating wealth of society and framed in the strategic research initiative devoted to the development of the Basque Country
- Creation and education of young scientific talent and **promote career** path to fulfill personal and professional development of talent
- **Institutional cooperation** at local, national and international level
- Internationalization and visibility of **Center's activities**
- **Promote the knowledge transfer** to society and contribute to the economic development and competitiveness of biomedicine and biotechnology industry in the Basque Country
- **Insure diffusion and outreach** of scientific knowledge to the society and industry
- Effective and **transparent management** of resources to fulfill funding agencies expectation and priorities in the Basque Country.



**27 de Noviembre, 2018**

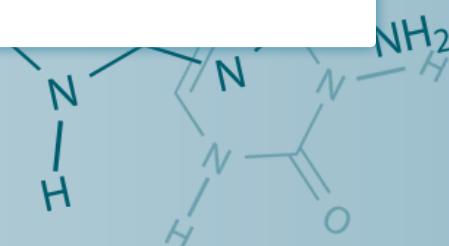
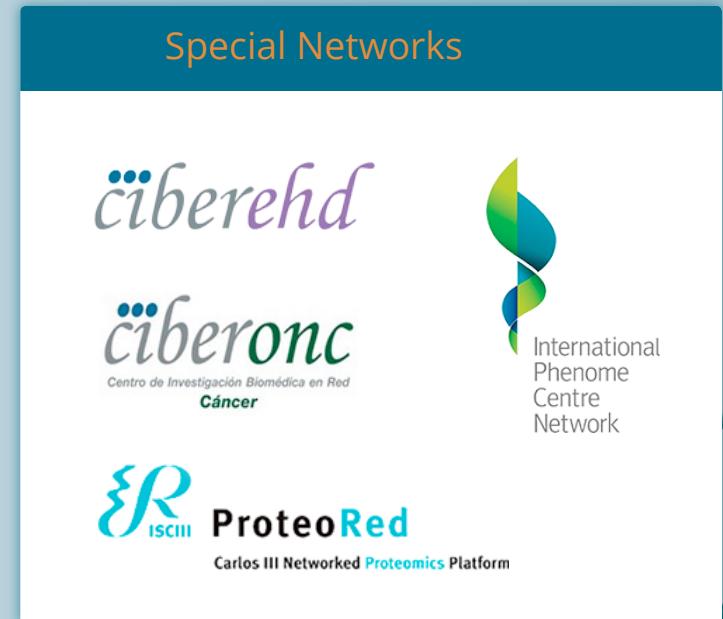
Se ha realizado una auditoría basada en procesos y enfocada a los aspectos significativos, riesgos, objetivos, de acuerdo con la norma de referencia. La auditoría se ha realizado por muestreo y con base a la información disponible en el momento de la auditoría. Los métodos utilizados han sido entrevistas, observación de evidencias, y revisión de la documentación y registros.

El equipo auditor considera que se han cumplido los objetivos de la auditoría y la organización ha establecido y mantenido su sistema de gestión de acuerdo a los requisitos de la norma y demuestra la capacidad del sistema para cumplir eficazmente con los requisitos del producto/servicio para el alcance, objetivos y política de la organización.

### Norma UNE 166002



# Singular Projects



## Strategic Plan: Bioinformatics



Dr. Urko  
Martínez  
Marigorta

Georgia Institute  
of Technology  
Atlanta, USA



**ikerbasque**  
Basque Foundation for Science



Dr. Antonio  
del Sol  
  
Luxembourg  
Centre for Systems  
Biomedicine (LCSB)  
University of  
Luxembourg



**ikerbasque**  
Basque Foundation for Science

# New Projects H2020



Investigator:  
**J. Jiménez-Barbero**  
RECGLYCANMR



European Research  
Council  
ADVANCED GRANT

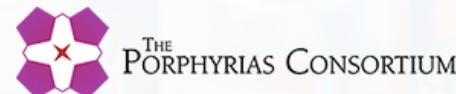
**2.5 M€**



**Atlas Molecular Pharma S.L.**



EMA/OD/186/17 (UPI-278)  
DRU-2018-6297



With the **American Porphyrias Consortium**.  
Joint effort for the clinical phase trial (I/II) of Ciclopirox for CEP.

## Services

Drug toxicity evaluation using CHASSYS™ platform

Billing 2018: **200€**

Billing 2019: **200€**

## Employment

Staff increase: **20%**

Employees: **9**

Liquid oral formulation development for the clinical phase trial  
2019



Pre-Investigational New Drug (IND) Meeting  
1Q 2020

# Scientific Output



## Publications



## Citations



85%  
Q1

30%  
D1

20%  
IF >10

## Collaborations RVCTI 2018



**BiMATERIALS**  
BASQUE CENTER FOR MATERIALS, APPLICATIONS & NANOSTRUCTURES

**bioCruces**

**biodonostia**

**bioef**

**CICbiomaGUNE**  
Komunitateko Ikerketa Ikerkuntzako Zentroa  
Center for Cooperative Research in Biomaterials

**ikerbasque**  
Basque Foundation for Science

Universidad  
del País Vasco  
Euskal Herriko  
Unibertsitatea

**POLYMAT**  
Basque Center for  
Macromolecular Design and Engineering

**Inbiomed**  
Investigación en medicina regenerativa

# Highlights



CIC bioGUNE researchers publish more than 150 publications. 17% of them have an Impact Factor above 10. The average IF in 2018 reaches 7,8.

Competitive funding at CIC bioGUNE reaches 66% of total funding.

CIC bioGUNE obtains one new ERC Advanced Grant (RECGLYCANMR) in 2018.

Two new research groups (Computational Biology and Integrative Genomics) join CIC bioGUNE.

CIC bioGUNE is recognized within the top 100 NPO/NGO Institutions worldwide, according to Nature Index.

The NMR facility of CIC bioGUNE is recognized as singular scientific infrastructure (ICTS) in Spain.

CIC bioGUNE obtains the UNE 166002 Quality Accreditation.

CIC bioGUNE and University of Deusto sign a formal agreement to foster training and research on health sciences.

The Scientific Advisory Board of CIC bioGUNE, including Nobel Laureate Richard Henderson, visits our premises for the corresponding evaluation, which is highly positive.

## Scientific Highlights



Rewiring urea cycle metabolism in cancer to support anabolism

Keshet, R; Szlosarek, P; Carracedo, A; Erez, A.

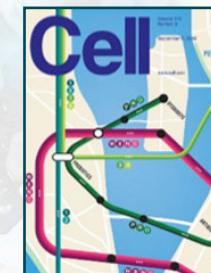
Nature Reviews Cancer. Volume / Issue / Pages:18(10):634-645.DOI: 10.1038/s41568-018-0054-z



Molecular nucleation mechanisms and control strategies for crystal polymorph selection

Van Driessche, AES; Van Gerven, Ni; Bomans, PHH; Joosten, RRM; Friedrich, H; Gil-Carton, D; Sommerdijk, NAJM; Sleutel, M.

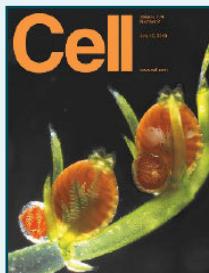
Nature. Volume / Issue / Pages:556(7699):89-. DOI: 10.1038/nature25971



Urea Cycle Dysregulation Generates Clinically Relevant Genomic and Biochemical Signatures

Lee, JS; Adler, L; Karathia, H; Carmel, N; Rabinovich, S; Auslander, N; Keshet, R; Stettner, N; Silberman, A; Agemy, L; Helbling, D; Eilam, R; Sun, Q; Brandis, A; Malitsky, S; Itkin, M; Weiss, H; Pinto, S; Kalaora, S; Levy, R; Barnea, E; Admon, A; Dimmock, D; Stern-Ginossar, N; Scherz, A; Nagamani, SCS; Unda, M; Wilson, DM; Elhasid, R; Carracedo, A; Samuels, Y; Hannenhalli, S; Ruppin, E; Erez, A.

Cell. Volume / Issue / Pages:174(6):1559-.DOI: 10.1016/j.cell.2018.07.019



SnapShot: Messenger RNA Modifications

Davalos, V; Blanco, S; Esteller, M.

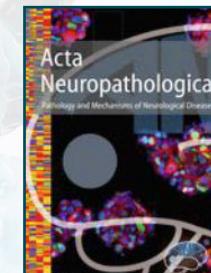
Cell. Volume / Issue / Pages:174(2):498-U566. DOI: 10.1016/j.cell.2018.06.046



Mechanisms of MAFG Dysregulation in Cholestatic Liver Injury and Development of Liver Cancer

Liu, T; Yang, HP; Fan, W; Tu, J; Li, TWH; Wang, JH; Shen, H; Yang, JW; Xiong, T; Steggerda, J; Liu, ZQ; Noureddin, M; Maldonado, SS; Annamalai, A; Seki, E; Mato, JM; Lu, SC.

Gastroenterology. Volume / Issue / Pages:155(2):557-.DOI: 10.1053/j.gastro.2018.04.032

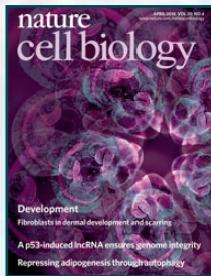


Cofactors influence the biological properties of infectious recombinant prions

Fernandez-Borges, N; Di Bari, MA; Erana, H; Sanchez-Martin, M; Pirisinu, L; Parra, B; Elezgarai, SR; Vanni, I; Lopez-Moreno, R; Vaccari, G; Venegas, V; Charco, JM; Gil, D; Harrathi, C; D'Agostino, C; Agrimi, U; Mayoral, T; Requena, JR; Nonno, R; Castilla, J.

Acta neuropathologica. Volume / Issue / Pages:135(2):179-199.DOI: 10.1007/s00401-017-1782-y

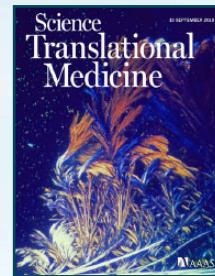
# Scientific Highlights



*CK1 alpha promotes tumour suppressive autophagy*

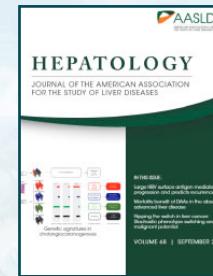
Hermanova, I; Carracedo, A.

*Nature cell biology*.Volume / Issue / Pages:20(4):369-.DOI: 10.1038/s41556-018-0079-2



*Repurposing ciclopirox as a pharmacological chaperone in a model of congenital erythropoietic porphyria*

Urquiza, P; Lain, A; Sanz-Parras, A; Moreno, J; Bernardo-Seisdedos, G; Dubus, P; Gonzalez, E; Gutierrez-de-Juan, V; Garcia, S; Erana, H; Juan, IS; Macias, I; Ben Bdira, F; Pluta, P; Ortega, G; Oyarzabal, J; Gonzalez-Muniz, R; Rodriguez-Cuesta, J; Anguita, J; Diez, E; Blouin, JM; de Verneuil, H; Mato, JM; Richard, E; Falcon-Perez, JM; Castilla, J; Millet, O.



*Science translational medicine*.Volume / Issue / Pages:10(459):-.DOI: 10.1126/scitranslmed.aat7467

*Liver Angiopoietin-2 Is a Key Predictor of De Novo or Recurrent Hepatocellular Cancer After Hepatitis C Virus Direct-Acting Antivirals*

Faillaci, F; Marzi, L; Critelli, R; Milosa, F; Schepis, F; Turola, E; Andreani, S; Vandelli, G; Bernabucci, V; Lei, B; D'Ambrosio, F; Bristot, L; Cavalletto, L; Chemello, L; Sighinolfi, P; Manni, P; Maiorana, A; Caporali, C; Bianchini, M; Marsico, M; Turco, L; de Maria, N; Del Buono, M; Tedesca, P; di Lena, L; Romagnoli, D; Magistri, P; di Benedetto, F; Bruno, S; Taliani, G; Giannelli, G; Martinez-Chantar, ML; Villa, E.

*Hepatology*.Volume / Issue / Pages:68(3):1010-1024.DOI: 10.1002/hep.29911



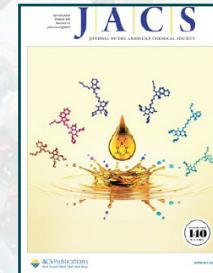
*MicroRNA-506 promotes primary biliary cholangitis-like features in cholangiocytes and immune activation*

Erico, O; Munoz-Garrido, P; Vaquero, J; Perugorria, MJ; Fernandez-Barrena, MG; Saez, E; Santos-Laso, A; Arbelaitz, A; Jimenez-Aguero, R; Fernandez-Irigoyen, J; Santamaria, E; Torrano, V; Carracedo, A; Ananthanarayanan, M; Marziani, M; Prieto, J; Beuers, U; Elferink, RPO; LaRussa, NF; Bujanda, L; Marin, JJG; Banales, JM.



*Water Sculpts the Distinctive Shapes and Dynamics of the Tumor-Associated Carbohydrate Tn Antigens: Implications for Their Molecular Recognition*

Bermejo, IA; Usabiaga, I; Companon, I; Castro-Lopez, J; Insauti, A; Fernandez, JA; Avenoza, A; Bustos, JH; Jimenez-Barbero, J; Asensio, JL; Peregrina, JM; Jimenez-Oses, G; Hurtado-Guerrero, R; Cocinero, EJ; Corzana, F.



*Journal of the American Chemical Society*.Volume / Issue / Pages:140(31):9952-9960. DOI: 10.1021/jacs.8b04801

*Well-Defined Oligo- and Polysaccharides as Ideal Probes for Structural Studies*

Delbianco, M; Kononov, A; Poveda, A; Yu, Y; Diercks, T; Jimenez-Barbero, J; Seeberger, PH.

*Journal of the American Chemical Society*.Volume / Issue / Pages:140(16):5421-5426. DOI: 10.1021/jacs.8b00254



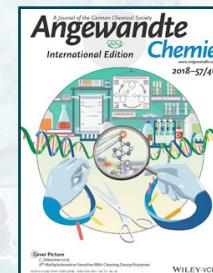
*Structural and Mechanistic Insights into the Catalytic-Domain-Mediated Short-Range Glycosylation Preferences of GalNAc-T4*

de las Rivas, M; Daniel, EJP; Coelho, H; Lira-Navarrete, E; Raich, L; Companon, I; Diniz, A; Lagartera, L; Jimenez-Barbero, J; Clausen, H; Rovira, C; Marcelo, F; Corzana, F; Gerken, TA; Hurtado-Guerrero, R.



*Oil for the cancer engine: The cross-talk between oncogenic signaling and polyamine metabolism*

Arruabarrena-Aristorena, A; Zabala-Letona, A; Carracedo, A.



*Science advances*.Volume / Issue / Pages:4(1):-.DOI: 10.1126/sciadv.aar2606

*Avenues to Characterize the Interactions of Extended N-Glycans with Proteins by NMR Spectroscopy: The Influenza Hemagglutinin Case*

de Toro, BF; Peng, WJ; Thompson, AJ; Dominguez, G; Canada, FJ; Perez-Castells, J; Paulson, JC; Jimenez-Barbero, J; Canales, A.

*ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*.Volume / Issue / Pages:57(46):15051-15055.DOI: 10.1002/anie.201807162

# Scientific Highlights



*The Acidity of a Carbon Nucleophile Dictates Enantioselectivity and Reactivity in Michael Additions to Aromatic and Aliphatic Enals via Iminium Activation*

Duce, S; Alonso, I; Lamsabhi, AM; Rodrigo, E; Morales, S; Ruano, JLG; Poveda, A; Mauleon, P; Cid, MB.

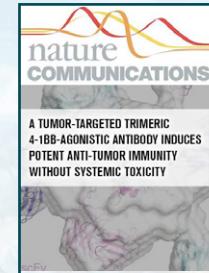
ACS CATALYSIS. Volume / Issue / Pages:8(1):22-34.DOI: 10.1021/acscatal.7b02806



*Cryo-EM structures of KdpFABC suggest a K<sup>+</sup> transport mechanism via two inter-subunit half-channels*

Stock, C; Hielkema, L; Tascon, I; Wunnicke, D; Oostergetel, GT; Azkargorta, M; Paulino, C; Hanelt, I.

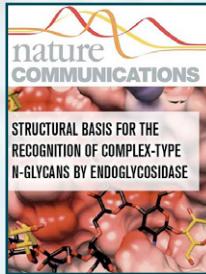
Nature communications. Volume / Issue / Pages:9(1):4971.-DOI: 10.1038/s41467-018-07319-2



*A tumor-targeted trimeric 4-1BB-agonistic antibody induces potent anti-tumor immunity without systemic toxicity*

Compte, M; Harwood, SL; Munoz, IG; Navarro, R; Zonca, M; Perez-Chacon, G; Erce-Llamazares, A; Merino, N; Tapia-Galisteo, A; Cuesta, AM; Mikkelsen, K; Caleiras, E; Nunez-Prado, N; Aznar, MA; Lykkemark, S; Martinez-Torrecuadrada, J; Melero, I; Blanco, FJ; de la Serna, JB; Zapata, JM; Sanz, L; Alvarez-Vallina, L.

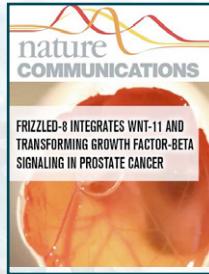
Nature communications. Volume / Issue / Pages:9(1):4809.-DOI: 10.1038/s41467-018-07195-w



*Structural basis for the recognition of complex-type N-glycans by Endoglycosidase S*

Trastoy, B; Klontz, E; Orwenyo, J; Marina, A; Wang, LX; Sundberg, EJ; Guerin, ME.

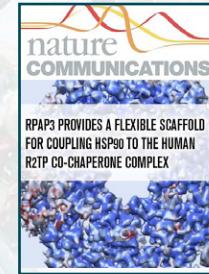
Nature communications. Volume / Issue / Pages:9():-.DOI: 10.1038/s41467-018-04300-x



*Frizzled-8 integrates Wnt-11 and transforming growth factor-beta signaling in prostate cancer*

Murillo-Garzon, V; Gorrono-Etxebarria, I; Akerfelt, M; Puustinen, MC; Sistonen, L; Nees, M; Carton, J; Waxman, J; Kypta, RM.

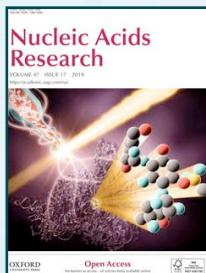
Nature communications. Volume / Issue / Pages:9():-.DOI: 10.1038/s41467-018-04042-w



*RPAP3 provides a flexible scaffold for coupling HSP90 to the human R2TP co-chaperone complex*

Martino, F; Pal, M; Munoz-Hernandez, H; Rodriguez, CF; Nunez-Ramirez, R; Gil-Carton, D; Degliesposti, G; Skehel, JM; Roe, SM; Prodromou, C; Pearl, LH; Llorca, O.

Nature communications. Volume / Issue / Pages:9():-.DOI: 10.1038/s41467-018-03942-1



*p15(PAF) binding to PCNA modulates the DNA sliding surface*

De March, M(De March, Matteo);Barrera-Vilarmau, S(Barrera-Vilarma; Crespan, E; Mentegari, E; Merino, N; Gonzalez-Magana, A; Romano-Moreno, M; Maga, G; Crehuet, R; Onesti, S; Blanco, FJ; De Biasio, A.

Nucleic acids research. Volume / Issue / Pages:46(18):9816-9828.DOI: 10.1093/nar/gky723



*Essentials of extracellular vesicles: posters on basic and clinical aspects of extracellular vesicles*

Nieuwland, R; Falcon-Perez, JM; Soekmadji, C; Boillard, E; Carter, D; Buzas, EI.

Journal of extracellular vesicles. Volume / Issue / Pages:7(1):1548234.-DOI: 10.1080/20013078.2018.1548234



*Compartmentalized activities of the pyruvate dehydrogenase complex sustain lipogenesis in prostate cancer*

Chen, JJ; Guccini, I; Di Mitri, D; Brina, D; Revandkar, A; Sarti, M; Pasquini, E; Alajati, A; Pinton, S; Losa, M; Civenni, G; Catapano, CV; Sgrignani, J; Cavalli, A; D'Antuono, R; Asara, JM; Morandi, A; Chiarugi, P; Crotti, S; Agostini, M; Montopoli, M; Masgras, I; Rasola, A; Garcia-Escudero, R; Delaleu, N; Rinaldi, A; Bertoni, F; de Bono, J; Carracedo, A; Alimonti, A.

Nature genetics. Volume / Issue / Pages:50(2):219+.-DOI: 10.1038/s41588-017-0026-3

# Scientific Highlights



## Editorial Activity



Joaquín Castilla  
Advisory Board



Juan Anguita  
Advisory Board



Malu Martínez Chantar  
Editor Board



Óscar Millet  
Associate Editor



Juan M. Falcón  
Review Editor



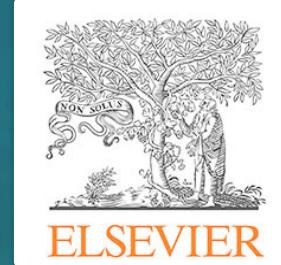
Rosa Barrio  
Review Editor



Juan Anguita  
Review Editor



Juan Anguita  
Review Editor



Felix Elortza  
Associate Editor



Óscar Millet  
Editor Board



Jesús Jiménez Barbero  
Associate Editor



Jesús Jiménez Barbero  
Editor Board



María Vivanco  
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Francisco Blanco  
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Óscar Millet  
Associate Board



Óscar Millet  
Editor Board



Juán Anguita  
Editor Board



Rosa Barrio  
Editor Board



Edurne Berra  
Associate Editor



Jesús Jiménez Barbero  
Editor Board



Jesús Jiménez Barbero  
Editor Board



Jesús Jiménez Barbero  
Editor Board

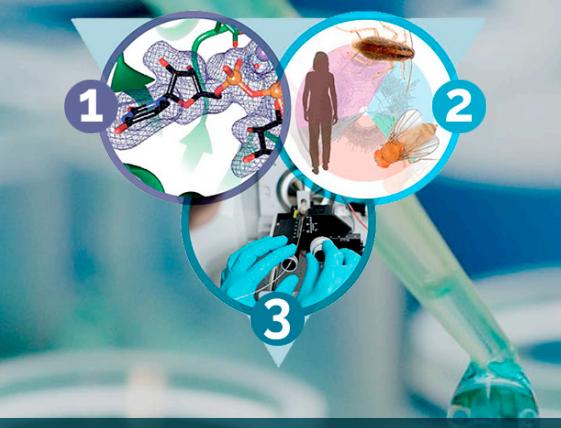


## Scientific Programmes



### Metabolism and Cell Signaling in Disease

- › Personalized medicine
- › Prostate Cancer
- › Breast Cancer
- › Colorectal Cancer
- › Liver Diseases
- › Rare Diseases
- › Biomarkers for Diagnosis
- › Biomarkers for Prognosis
- › Drug Design and Discovery



### Molecular Recognition and Host-Pathogen

- › Rare Diseases
- › Homeostasis
- › Viral Infections
- › Bacterial Infections
- › Prion Disease
- › Tick-Borne Disease
- › Immune Response
- › Drug Design and Discovery

### Technological Platforms

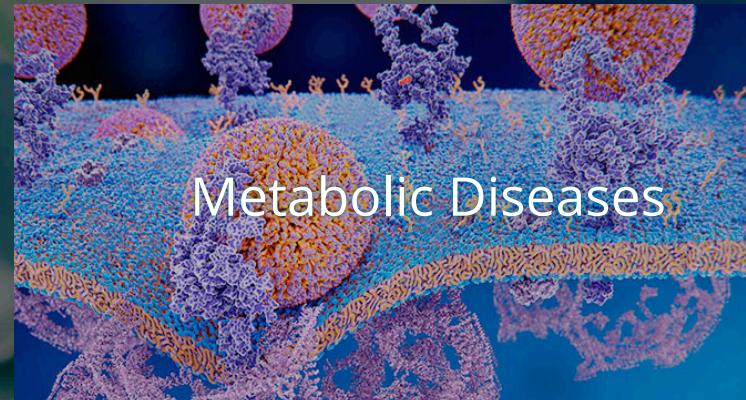
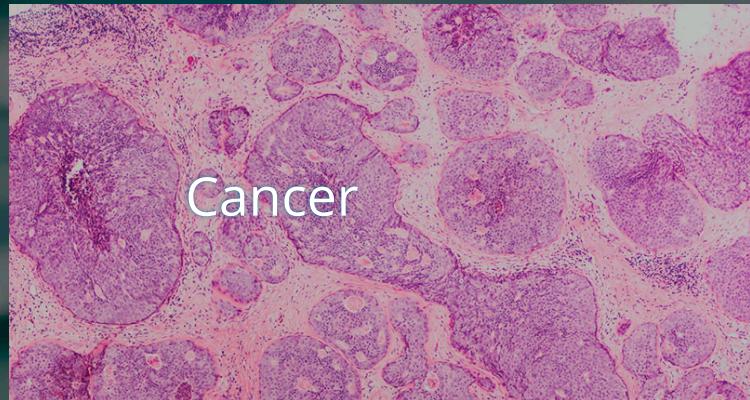
- › PNMR Spectroscopy
- › Macromolecular Crystallography
- › Electron Microscopy
- › Genome Analysis
- › Proteomics
- › Metabolomics
- › Animal Facility

Generation of knowledge

Technology transfer

Commercialization of results

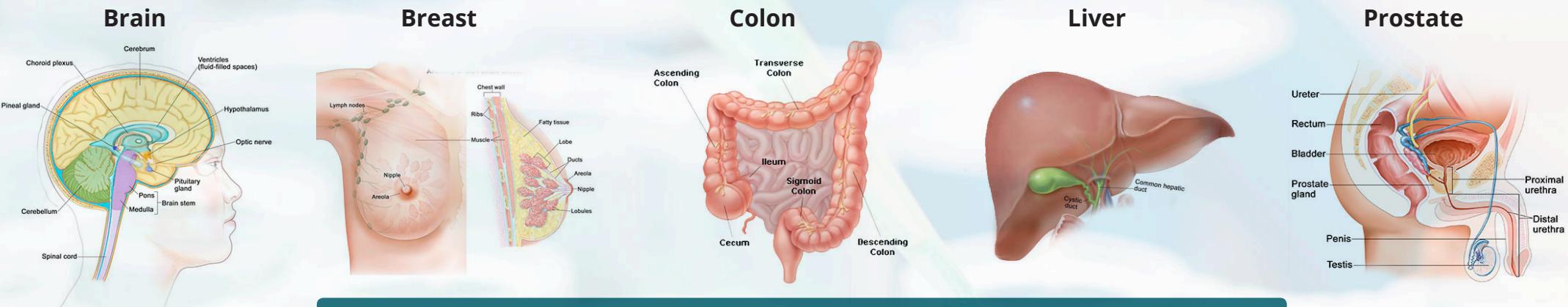
**Scientific Programmes**  
**Research lines**



The cutting-edge scientific activity of CIC bioGUNE researchers explores the interface between Chemistry and Biomedicine, with emphasis on Structural, Molecular and Cell Biology. An integrative Bioinformatic Program extrapolate relevant conclusion from basic science.

## Scientific Programmes

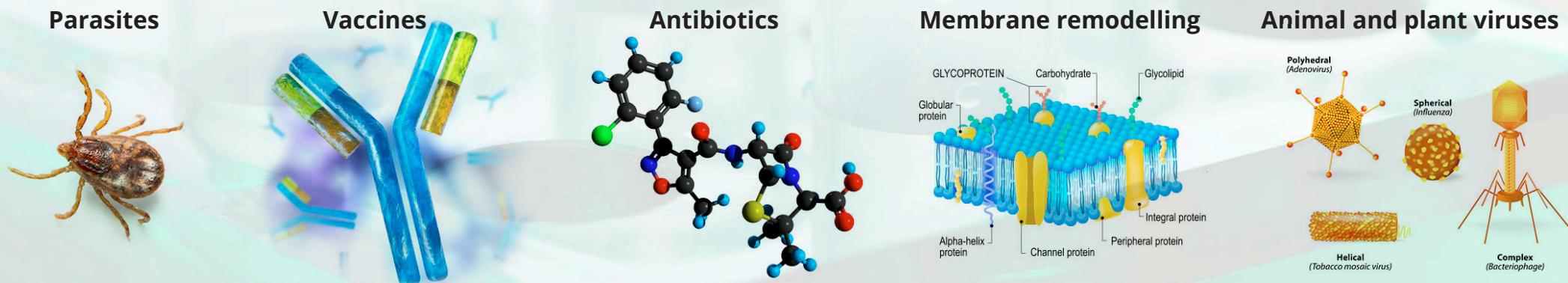
# Metabolism & Cell Signaling in Disease



- 1 Target discovery and evaluation of their therapeutic potential
- 2 Cancer and more: Identification of biomarkers with potential diagnostic value
- 3 Novel therapies against rare diseases
- 4 The molecular basis of fibrosis
- 5 Nonalcoholic steatohepatitis

## Scientific Programmes

# Molecular Recognition & Host-Pathogen Interactions



- 1 Bacterial and Viral Infections: Vaccines for human and animal health
- 2 Mechanisms of membrane remodelling during microbial invasion and propagation
- 3 Plant vaccines and transgenics
- 4 Antibiotics research and molecular characterization

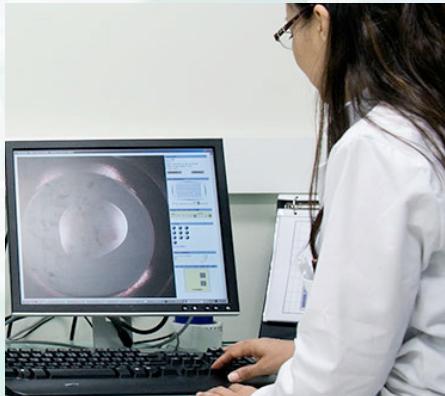
# Scientific Programmes

# Technology Platforms

Genome Analysis Platform  
Proteomics Platform  
Metabolomics Platform

Animal Facility  
Antibodies Production  
Drug Repositioning & Discovery

Nuclear Magnetic Resonance  
Macromolecular Crystallography  
Electron Microscopy Platform



## Collaboration Models

Services

R&D Collaborations

Consulting

# Theses



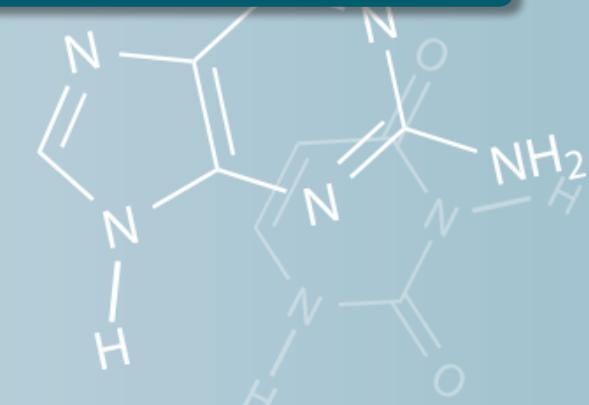
**65** in progress

CIC bioGUNE Advanced Training  
November 12-16th 2018

**3** Theses under negociation



**28** RVCTI





CIC bioGUNE es el nuevo Laboratorio de RMN de Euskadi (LRE), ICTs de RMN



Infraestructuras  
Científicas y Técnicas  
Singulares



INFRAESTRUCTURAS CIENTÍFICAS Y TÉCNICAS SINGULARES

## El laboratorio de resonancia nuclear del CIC bioGUNE, infraestructura estratégico del Estado

EFE - Lunes, 26 de Noviembre de 2018 - Actualizado a las 19:41h

icomental



Twitter



Me gusta

4 Compartir



Un grupo de científicos, en el CIC bioGUNE en las instalaciones del centro en Zamudio.  
(Foto: José Mari Martínez)

El laboratorio de resonancia magnética nuclear de CIC BioGUNE, ubicado en el parque científico de Bizkaia, ha sido incluido por el ministerio de Ciencia en la red de infraestructuras científicas y técnicas singulares (ICTs), que se renueva cada cuatro años.

BILBAO. La otra instalación vasca incluida entre las infraestructuras de ciencia estratégicas en España es la plataforma de imagen molecular y funcional de CIC biomaGUNE, de Donostia, que ya formaba parte de este listado anteriormente.

Las instalaciones ICTs son únicas o excepcionales y tienen unos costes elevados por lo que están disponibles para todo el colectivo estatal de investigación, desarrollo e innovación.

En el caso del laboratorio de BioGUNE aporta apoyo técnico en experimentos de vanguardia relacionados con las biomoléculas en solución para determinar estructuras de proteínas y carbohidratos para nuevos fármacos o biomarcadores.

# Convenio Universidad de Deusto

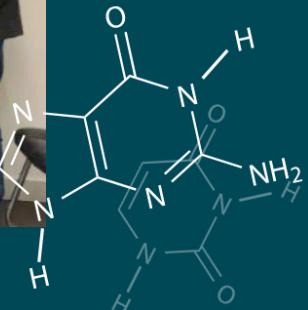


**Deusto**  
Universidad de Deusto

CIC bioGUNE y Deusto firman un convenio para potenciar el trabajo docente e investigador en Ciencias de la Salud



CIC bioGUNE y la Universidad de Deusto han firmado un convenio de colaboración para el desarrollo de acciones conjuntas de formación e investigación en los titulos relacionados con el área de salud. El objetivo es favorecer el intercambio de conocimiento y de información de interés mutuo, tanto en el ámbito científico y técnico como en el profesional. Este acuerdo fue suscrito el 29 de octubre por el rector de la Universidad, José María Guibert, y el director general de CIC bioGUNE, José María Mato.



## SAB Visit 2018

1st  
Session



2nd  
Session



- Prof. Christian Griesinger, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
- Prof. Ulrich Günther, Institute of Cancer and Genomic Sciences, College of Medical and Dental Sciences, University of Birmingham, UK
- Prof. Nancy Hynes, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland
- Prof. Manuel Serrano, Institut de Recerca Biomédica de Barcelona, Spain.

- Prof. Adriano Aguzzi, Institute of Neuropathology, University Hospital of Zurich, Switzerland
- Prof. Quentin Anstee, Institute of Cellular Medicine, Newcastle University, UK
- Prof. Tom Blundell, Department of Biochemistry, Univ of Cambridge, UK
- Prof. Avelino Corma, Institut Tecnología Química, CSIC-UPV, Valencia, Spain
- Prof. Richard Henderson, MRC Lab Molecular Biology, Cambridge, UK

# Awards and Recognitions



La Real Sociedad  
Española de Química  
concede su Medalla  
de Oro a Jesús Jiménez  
Barbero.



Alberto Fernández  
Tejada, Premio Joven  
Investigador 2018 de la  
Real Sociedad Española  
de Química.



El Gobierno Vasco reconoce la labor  
desarrollada por el investigador  
Óscar Millet en CIC bioGUNE



Premio ICOMA de investigación al  
Dr. Joaquín Castilla



Premios al Dr. Arkaitz Carracedo  
• Joven Investigador Sociedad Española de Bioquímica y Biología Molecular SEBBM  
• Joven Investigador en Oncología Fundación AstraZeneca  
• VII Premio Nacional de Investigación en Cáncer Doctores Diz Pintado



Ganeko Bernardo  
Premio José Tormo SEBBM 2018



Georgina Ormaza  
Best PhD Thesis, GERMN 2018

# Activities 2018



# Lectures

13<sup>TH</sup> ANNIVERSARY LECTURE



Prof. M. Angela Nieto  
Instituto de Neurociencias  
(CSIC-UMH), San Juan de Alicante

## Epithelial plasticity in health and disease

Friday,  
February 16  
Atrio 800  
12.00H



Epithelial homeostasis is crucial to maintain tissue architecture, and therefore, it needs to be tightly regulated in the adult. By contrast, embryonic cells show a high degree of epithelial plasticity required for proper morphogenesis and, in particular, for the implementation of massive cell movements that occur during gastrulation and neural crest delamination among other processes. We have been interested in the analysis of cell movements, plasticity and epithelial to mesenchymal transitions (EMT) for many years, and found that the reactivation of developmental EMT-like programs in adult cells leads to several pathologies including tumor progression and organ degeneration. While the epithelial and mesenchymal cells are usually considered as extreme phenotypes, the two states can interconvert. Under the right conditions, cells adopt a hybrid phenotype expressing both epithelial and mesenchymal markers and from which they can reverse to the original state or move towards a more mesenchymal phenotype. Hybrid transitory states can favor coordinated cell migration or wound healing but they can also enable the formation of clusters of migratory cancer cells with increased tumor initiating potential. However, in contrast to the situation in cancer, the intermediate phenotype holds promise for new antifibrotic therapeutic approaches, as inhibiting EMT can attenuate established fibrosis. I will discuss different scenarios in which this intermediate phenotype is observed both in development and in disease, and will also refer to a new developmental EMT that we have found to be crucial for heart laterality and morphogenesis in vertebrates.

# SPECIAL LECTURES WEEK

June 2018  
Atrio 800



**Prof. Joachim Frank**  
2017 Nobel Prize in Chemistry  
Columbia University, NY, USA

7  
June  
12:00h

"Single-particle cryo-EM—the sky is the limit"



**Prof. Toni Vidal-Puig**  
University of Cambridge, UK

8  
June  
12:00h

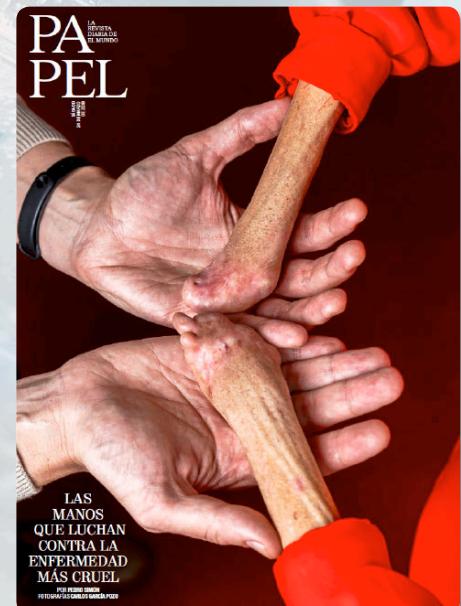
"Adipose tissue expandability, lipotoxicity and the metabolic syndrome"

Joachim Frank studied Physics at the University of Freiburg and the University of Munich. He worked on his dissertation in DMV-related image processing with Walter Hoppe at the Max-Planck Institute for Biochemistry and finished his PhD in 1970 at the Technical University of Munich. In 1971 he joined the laboratory of Dr. R. H. Williams at several labs in the USA. In 1973 he went to the Cavendish Laboratory to work under Vernon Ellis Cosslett on image processing and electron optics. In 1975 he received an offer from the University of California San Francisco to join the molecular biology and image processing group associated with a 1.2 MV electron microscope. While at the University of California he joined the faculty of SUNY Department of Molecular Sciences and developed the first cryo-EM laboratory. He was a HHMI investigator from 1998 to 2017. Since 2008 he is professor at the Departments of Biochemistry and Molecular Biophysics, and Biological Sciences of Columbia University.

The 4<sup>th</sup> October 2017, The Royal Swedish Academy Of Science decided to award the Nobel Prize in Chemistry 2017 to Jacques Dubochet, Joachim Frank and Richard Henderson, "for developing cryo-electron microscopy for the high-resolution structure determination of biomolecules in solution"

Prof. Vidal-Puig obtained his medical degree from Valencia Medical School (Spain) before training in clinical endocrinology at Grindlays Medical School (UK), where he obtained his PhD based on clinical and physiological studies of the obese patient. He then moved to the US to complete his postdoctoral training of the Paul Dudley White Fellowship from the American Heart Association funded post-doctoral training at Harvard University, supporting his work with Professor Gerald Reaven. His research interests have focused on the identification of seminal papers on the genetics and expression of PPARG in obesity and diabetes human disease and in mouse transgenics and knockout technologies. In 2010 he moved to the University of Cambridge to study the molecular mechanisms of obesity, diabetes and cardiovascular complications. Prof. Vidal-Puig is currently the Professor of Molecular Nutrition and Metabolism at Cambridge University and a Wellcome Trust Senior Research Fellow at the Wellcome Trust Sanger Institute, Cambridge. He is Deputy Director of the Wellcome Trust MRC Institute of Metabolic Science, Director of the Cambridge Phenomics Centre, and Associate Faculty at the Wellcome Trust Sanger Institute. His research interests focus on the molecular mechanisms of lipid-induced insulin resistance and on developing strategies to prevent diabetes and cardiovascular diseases. His work by translational, basic and population medicine methodology. Prof. Vidal-Puig has authored 240 scientific papers, trained many PhD students and postdoctoral fellows, and received numerous awards and distinctions. He is a fellow of the National Academy of Sciences, a member of the Royal Society, a fellow of the Royal Society of Medicine, a fellow of the Royal Society of Medicine, a fellow of the Royal Society of Chemistry, a fellow of the Royal Society of Biology, a fellow of the Royal Society of Endocrinology Medal, and a Cancer Distinguished Award Lilly Foundation.

# Christmas Lecture



# Activities 2018



## Conferences

**ISEV2018** | ANNUAL MEETING | 2-6 May | Barcelona, Spain | ISEV2018.ORG

**EACR** Conference Series | Mechanisms to Therapies | Innovations in Cancer Metabolism | 09 - 11 October 2018 | Bilbao, Spain

**LAGUARDIA** OCTOBER, 25th-26th 2018 | 7<sup>TH</sup> IBERIAN CONGRESS ON PRIONS

**X SPANISH DRUG DISCOVERY NETWORK MEETING** 22-23 November 2018 | Biskaiako Areatxa - Bilbao - Spain | Drug Discovery Network | CIC bioGUNE

**PROTEOSTASIS** cost  
EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

**Proteostatic Mechanisms in Health and Disease**  
The Final COST Action BM1307 Meeting  
22-24 February 2018, Divani Palace Acropolis, Athens, Greece

**IV REUNIÓN DEL GRUPO ESPAÑOL DE HIPOXIA**  
1<sup>a</sup> Reunión de RedHYPOX:  
Red de Excelencia de Investigación en Hipoxia (SAF2017-90794-REDT)

**Red HYPOX**

**Granada, 29 y 30 de Noviembre de 2018.**  
Parque de las Ciencias.  
Av. de la Ciencia, s/n  
18006 Granada

**BILBO TB**  
Spanish Tuberculosis meeting  
September 17<sup>th</sup>-19<sup>th</sup>, 2018

**MikrobioGUNE**  
1<sup>st</sup> Basque Microbiology Meeting

The first Basque Microbiology Meeting will be held in Bilbao at the Biskaiako Areatxa - UPV/EHU in December 11<sup>th</sup>, 2018

Topics included, but not limited to:

- Antimicrobial Resistance.
- Biology of Pathogenic Microorganisms.
- Biotechnology, Industry and Food Microbiology.
- Clinical Microbiology and Epidemiology.
- Microbial Ecology and Microbial Communities.
- Host-Microbe Interactions.
- Structural and Molecular Microbiology.

Deadline for registration and abstract submission: September 15<sup>th</sup>

Supported by:  
Universidad del País Vasco | Euskal Herriko Unibertsitatea | CIC bioGUNE | Centro de Investigación Cooperativa en Biociencias

Contact and information  
Email: mikrobiogune@gmail.com  
Twitter: @MikroboG

## Courses/workshops/meetings

**GLYCOVAX TRAINING EVENT IV**  
12<sup>th</sup>-16<sup>th</sup> March 2018 - CIC bioGUNE, Building 801A - Bilbao, Spain

**Applications of Electron Microscopy: Knowledge and facilities in the Basque Country**

**Venue**  
CIC bioGUNE  
Bilbao Science and Technology Park  
Building 800 (Atrium), Derio  
March 15, 2018

**CIC bioGUNE**  
Bioteknologia Ikerkuntza Kooperatiboa Zentroa  
Centro de Investigación Cooperativa en Biotecnología

**Image Processing for Electron Microscopy with scipion in the cloud.**  
Carlos Oscar Sorzano

Bilbao, March 1, 2018  
Venue:  
CIC bioGUNE  
Building 801- Atrio

# Dissemination and Outreach 2018

## Press clippings



### CIC bioGUNE aborda las nuevas terapias en el tratamiento de enfermedades raras

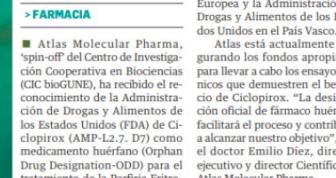
Conferencia organizada con el British Council y la Federación de Enfermedades Raras. El investigador Oscar Millet, jefe de Laboratorio en CIC bioGUNE, presentó las novedades terapéuticas para el tratamiento de las enfermedades raras. La conferencia se realizó en la sede del CIC bioGUNE y contó con la participación de expertos de la Federación Española de Enfermedades Raras.

Richard Henderson, director científico de CIC bioGUNE, y Pablo Minio, vicepresidente de la Federación Española de Enfermedades Raras, y Oscar Millet, investigador del CIC bioGUNE, asistieron a la conferencia. El director científico del CIC bioGUNE, Oscar Millet, presentó las novedades terapéuticas para el tratamiento de las enfermedades raras. La conferencia se realizó en la sede del CIC bioGUNE y contó con la participación de expertos de la Federación Española de Enfermedades Raras.

### Reconocimiento a la labor docente de CIC bioGUNE por la Facultad de Ciencia y Tecnología de la Universidad del País Vasco UPV/EHU



### Atlas Molecular Pharma recibe la aprobación de EE.UU. para el Ciclopirox



Los programas de Medicamentos Huérfanos de las agencias europea y americana de medicamentos proporcionan el estatus de huérfano a los medicamentos y productos biológicos que están desarrollando para tratar enfermedades raras o trastornos que afectan a un porcentaje muy pequeño de la población. [EE]

### Gipuzkoapuesta por las biociencias con el apoyo a tres nuevas iniciativas



### CIC bioGUNE, seleccionada en la primera convocatoria de ayudas biomédicas la Caixa

Un proyecto de CIC bioGUNE, liderado por Arakiltz Carracedo, para detectar la metástasis de cáncer de próstata, ha sido seleccionado en la primera convocatoria de ayudas de investigación de biomédica que ha realizado la Fundación Banco de la Caixa, a la que destina 12 millones de euros anuales. A la convocatoria, que se abrió el pasado mes de octubre, se presentaron 785 proyectos liderados por investigadores de universidades, hospitales y centros de investigación sin ánimo de lucro de España y Portugal.

El proyecto de Arakiltz Carracedo se centra en la metástasis, la

principal causa de mortalidad de las enfermedades oncológicas. En el contexto del cáncer de próstata, un porcentaje de pacientes recaen después del tratamiento localizado de primera línea, y presentan un alto riesgo de fracasar en terapias posteriores y debutar con metástasis. Actualmente es muy difícil anticipar la metástasis o detectarla de manera precoz para así frenar la progresión de la enfermedad. Este proyecto se fundamenta en la identificación de biomarcadores del tumor de próstata que informen sobre su diseminación temprana.

En esta primera convocatoria de ayudas de investigación de biomédica de la Caixa, el procedimiento que se lleva a cabo en el proceso de selección ha permitido

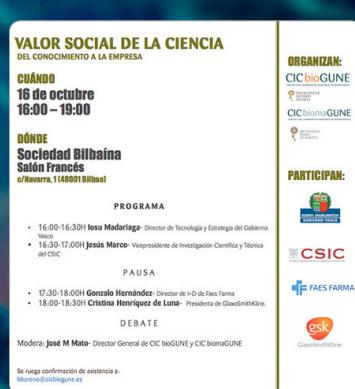


do elegir 20 proyectos de excelencia científica y con gran potencial e impacto social en los campos de la investigación básica, clínica y translacional. Las iniciativas fueron evaluadas por un jurado en una etapa de revisión por pares en la que participaron 290 expertos de reconocido prestigio internacional, especializados en cada una de las áreas de investigación. [EE]



# Dissemination and Outreach 2018

We have also participated in...





## Radio



SER Euskadi

SER  
Hoy por  
hoy Bilbao



RADIO  
USAL



RADIO  
BILBAO  
SER

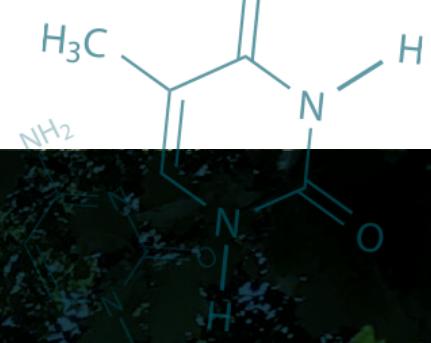


- Arkaitz Carracedo "Premio Nacional de Investigación en Cáncer Doctores Piz Pintado" y "Premio AstraZeneca"
- Joaquín Castilla "Insomnio familiar letal"
- Hasier Eraña "artículo publicado en PNAS"
- José M Mato y Marcelo Guerín "Resistencia bacteriana"
- Juan Anguita "Enfermedad de Lyme"
- José M. Mato, Luis Liz y Jesús Jiménez Barbero "Consecución de las Avanced Grant"
- José M Mato, Óscar Millet y Joaquín Castilla "Día de las enfermedades raras"
- Arkaitz Carracedo y Verónica Torrano "Congreso del Cáncer"
- José M. Mato "El valor social de la ciencia" y "OWL Metabolics"
- Retransmisión en directo desde CIC bioGUNE del programa "Hoy por Hoy Bilbao" de la cadena SER.

## TV



- Jesús Jiménez Barbero "ERC Advanced Grant"
- Arkaitz Carracedo "Congreso del Cáncer"
- Juan Anguita "Informe de ciencia de Ikerbasque"



# CICbioGUNE

CENTER FOR COOPERATIVE RESEARCH IN BIOSCIENCES



EXCELENCIA  
SEVERO  
OCHOA

