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Achucarro

BASQUE CENTER FOR NEUROSCIENCE

scientia ad rememdium

Annual Report

2015

Contents

Foreword

Welcome to the annual report of activities developed at the **Achucarro Basque Center for Neuroscience** in 2015.

This year we continued developing and consolidating our centre in all the strategic areas and lines described in this report.

As a summary, may I mention that we attracted to Bilbao, and helped organising the reference congress in our area of research, the Glia Meeting 2015, which gathered more than 1,200 people, from July 14th to 18th. We can proudly say that, so far, this has been the largest and the best edition in the long life of this huge scientific event.

We also had the first plenary visit and meeting of our International Scientific Advisory Committee (ISAC), which examined and recognised the deployment and goals achieved in the short life of the centre, and provided valuable feedback and advice to face the challenges ahead.

But probably the main issue for us, which has to do with our current needs and strategic planning was the agreement among the Science Park in the campus of the UPV/EHU in Leioa, and our Board of Trustees, to establish the future headquarters of Achucarro in a building closer to the campus and its facilities, where we will finally could put together all our capacities. This state-of-the-art building, which will be equipped with modern laboratory and infrastructures, will allow us to really develop our plans and research programme, thus contributing to foster the Basque neuroscience in Europe, aligned with Smart Specialisation Strategy of our region.

So we are very much looking forward to the future and our new building in 2016.

Carlos Matute
Scientific Director

One of the top-ten Breakthroughs of the Year 2015 published by Science magazine was related with neuroscience: Although we thought the body was mapped, neuroscientists from the University of Virginia found that the ***lymphatic system exists in the brain****. This discovery, opens a new door in the relation between the brain and the lymphatic system and can have implications on the study and treatment of neurological diseases like Alzheimer or multiple sclerosis. Furthermore this discovery shows one more time, that there is a lot to discover in brain research.*

1. Strategy and Management

Nowadays one of the major societal challenges is the treatment of brain diseases. To date, we do not have any therapy for the majority of these diseases and more than 25% of the European citizens are living with a brain disease. Interdisciplinary, collaboration and experimental excellence are fundamental for successful neuroscience research. Indeed, recent advances in scientific technology, which include molecular biology, genetic modifications, in vivo imaging at different levels of brain organisation, modern pharmacology and electrophysiological techniques offer unprecedented possibilities for novel data acquisition. This becomes even more advanced and powerful when all these techniques are employed in combination.

Collaboration between research groups with distinct and complimentary expertise and technologies continues to be crucial for evolving in this field that yet has a lot to discover.

Aligned with this ideas, the *Strategic Plan for Science, Technology and Innovation 2020* launched by the Basque Government in 2014 is one of the most relevant policies for Achucarro in force during 2015. Since this plan is designed within the guidelines of the European Research and Innovation Smart Specialisation Strategy (RIS3), both documents provide us with a framework to develop our future research strategy.

SCIENTIFIC PLAN 2014-2017

Achucarro has the will of becoming one of the European references in the fundamental and translational research in the field of neuroscience.

The overall objective of the centre is to perform co-ordinated multidisciplinary research of the brain functions on all levels from single molecules through individual cells and acutely isolated nervous tissues to the brain networks operating in vivo to further advance the discoveries in physiology and pathophysiology of the nervous system. In particular, the main strategic direction of the centre will be in depth study of neuronal-glial biology in normal and pathological brain.

To meet this goals, Achucarro designed a Strategic Plan for the period 2014- 2017 that contains **three high-level research programmes** including different areas that involve the coordinated and complementary expertise of the different research groups from the centre.

- **Characterisation of the role of glial cells in the physiology of the nervous system**
  - roles of astrocytes in synaptic communication
  - neurotransmitter signalling during neurogenesis and gliogenesis
  - mechanisms of microglia phagocytosis during neurogenesis

- **Characterisation of structural and functional changes of neuronal-glial networking in the aged brain**
  - age-dependent remodelling of neuronal-glial signalling
  - regulation of the intrinsic properties of neural stem cells in the adult hippocampus

- **The role of neuroglia in neurodegenerative diseases and other neurological disorders**
  - research on general mechanisms of neuron and glial cell death
  - understanding the pathophysiology of Alzheimer's disease and Epilepsy
  - genetics of autoimmune pathogenesis of Multiple Sclerosis (MS) and neuroinflammation

The two key elements that define our strategy are our Mission and Vision

Mission

Achucarro Basque Center for Neuroscience is

- the **research center** fostered by **Ikerbasque** and the **University of the Basque Country (UPV/EHU)**,
- devoted to **fundamental and translational research in neuron-glial biology**,
- for the discovery of new **therapies for brain diseases**,
- in **cooperation** with the local community and **networked** with the international institutions in the field of **neuroscience**,
- with the aim of contributing to the **training of future neuroscientists**.

Vision

In the year 2017, Achucarro Basque Center for Neuroscience strives to lead and coordinate the Basque efforts to advance in the neuroscience knowledge, by:

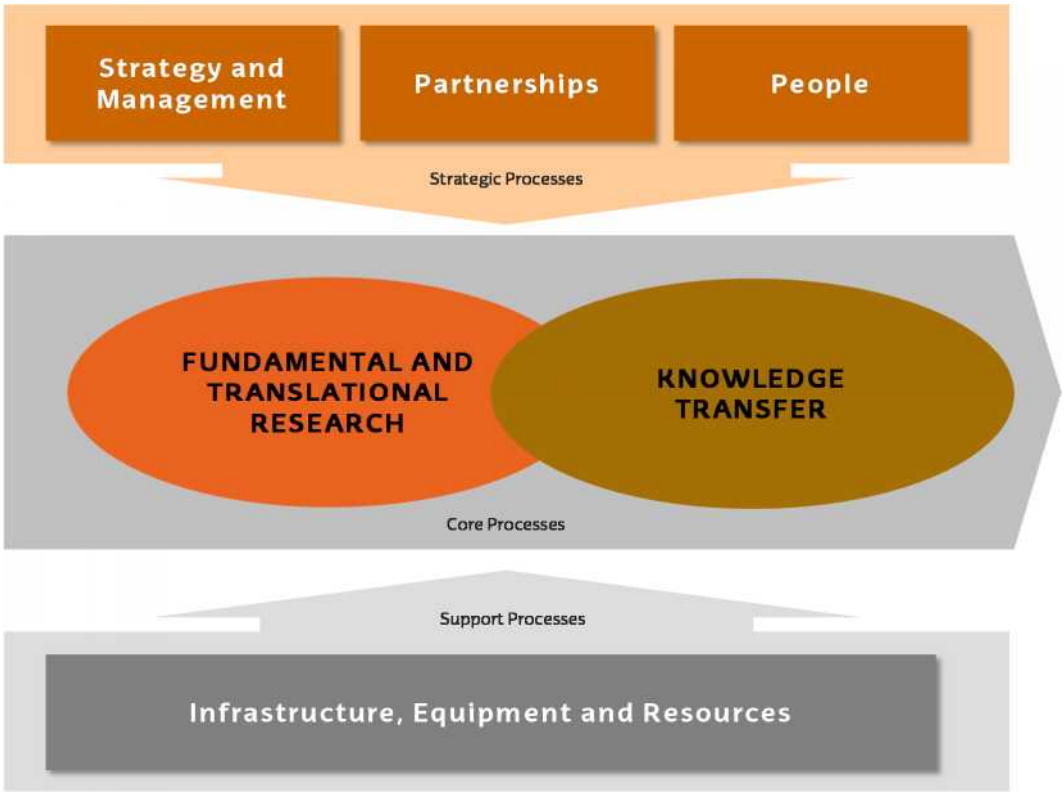
- Establishing a world-class research center, with internationally recognized research groups and state of the art equipment and facilities,
- To contribute to the understanding of the human brain in the field of neuron-glial biology,
- For generating relevant knowledge and scientific results that contribute to the well-being of the Society.

MANAGEMENT PLAN 2015

Achucarro strives to perform excellent research, by also performing excellent management processes. Our approach to implement this strategy is to design, develop and continuously improve a management model based on processes, following the guidelines and recommendations of the **European Foundation for Quality Management (EFQM)** and the **Basque Foundation for Quality (Euskalit)**.

The aim of our management processes is to effectively and efficiently develop our Mission and Vision. Thus all the activities in the centre are managed by one or more processes in this model, and that's the reason for the structure of this annual report document.

The Map of Processes that we have implemented for deploying our strategy in 2015 was this:



This is the planning and tracking of the Management Plan for this year.

Even if the socio-economic situation in our environment continues being adverse for the steady planning and unhurried development of our operations, **we managed to complete successfully the 97% of the planned activities, and the 100% of those which only depended on us**.

*Collaboration and partnering with other institutions and people are essential for the successful launching of a project like **Achucarro**. Furthermore, the very conception of the institutions promoting the project, and the ties between **Ikerbasque** and **UPV/EHU**, ensure joint and shared success, not just for the stakeholders directly linked to Achucarro, but for the whole Basque science system.*

2. Partnerships and Collaborations

Depending on the impact of each partnership or collaboration in the development of the centre, we have classified our collaboration relationships as **Institutional, Strategic or Operational**. This classification helps us determine different types of management for each case. In some cases, the relationship with one institution may straddle more than one of these categories.

INSTITUTIONAL ALLIANCES

Institutional partnerships and collaborations are those based on a partnership agreement or similar document, which enables us to maintain a close collaborative relationship in specific areas. To some extent, such alliances are also strategic in nature, as indicated by the agreements signed with Ikerbasque and the UPV/EHU for the appointment of personnel.

The main institutional agreements currently in force are:

Basque Government

- Agreement to support the activities of the centre in the period 2014-2017.

Ikerbasque

- Framework Agreement for the appointment of research staff: Ikerbasque Research Professors and Ikerbasque Research Fellows.

University of the Basque Country (UPV/EHU)

- Framework Agreement.
- Specific Agreement for the appointment of the Scientific Director.
- Specific Agreement for the appointment of Teaching and Research and Personnel.
- Specific Agreement for the appointment of Academic and Research Collaborators.
- Specific Agreement to manage the application to European projects.

Basque Science, Technology and Innovation Network

- Attachment to this network and recognised as a BERC Basque Excellence Research Centre.

STRATEGIC ALLIANCES

We consider strategic alliances those that we establish with all kinds of institutions operating in our area, either generally or specifically. Apart from those partnerships that we systematically develop with the members of our Board of Trustees, for us, Strategic collaborators are:

European Commission - HRS4R Community

Following our endorsement of the European Charter for Researchers (see section 3. People) fostered by the European Commission, we were invited to participate in a work group institutions involved and committed to the same principles and policies. This forum provides us with valuable access to the most current policies of the Directorate General for Research and Innovation and other European research institutions.

Euro-BioImaging

Achucarro and the Biophysics Unit (a joint research institution created by the Spanish National Research Council –CSIC- and the University of the Basque Country – UPV/EHU-) have been ratified this year as a node in the future Euro-BioImaging (EuBI) network, that expects to start operating in 2016.

This is a largescale pan European research infrastructure project on the European Strategy Forum on Research Infrastructures (ESFRI) Roadmap, to build a distributed imaging infrastructure across Europe that will provide open access to innovative biological and medical imaging technologies for European researchers.

Bizkaia Talent

Established in 2005 with the support of the Provincial Council of Bizkaia, Bizkaia Talent is a non-profit organisation that fosters and facilitates the attraction, connection and retention of highly qualified professionals to the Basque Historic Territory of Bizkaia. Bizkaia Talent is a strategic partner and an ally of Achucarro, which takes our name and objectives to the many international scientific events they attend, supporting our talent attraction process.

International forums and professional associations

Both, as an institution and through our researchers, we participate in all the relevant forums in our area, and strive to expand our institutional presence. Being present and active in the international sphere is strategic and crucial of ensure that our strategy and objectives continue to be challenging and current. CiberNed, Network Glia, Spanish Society of Neurosciences (SENC), FENS, Society for Neurosciences,... are part of this group of partnerships.

OPERATIONAL ALLIANCES AND PARTNERS

Achucarro has a number of different relevant providers considered as allies for their importance and involvement in the development of our strategic objectives.

Bizkaia Science and Technology Park

This is the case of the Science and Technology Park of Bizkaia, which has provided a local basic-though appropriate-site, on a rental basis, for the centre of operations and the physical image of the new centre.

i2Basque

The Basque Academic Network provides telecommunication and ICT support services and infrastructures to the member organisations of the Basque Science, Technology and Innovation Network. Achucarro, as a member of that network, has access to the infrastructures and resources within this network.

INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE (ISAC)

Our ISAC is currently composed of some distinguished colleagues, coming from different geographical areas, and with expertise in different fields of neuroscience.

In 2015, we held a plenary meeting for the first time since the Achucarro was created and they were appointed members of this panel. Their feedback about the process was valuable, and we established a future site visit in 2017, for a complete evaluation of the centre.

Jesús **Ávila**

CBM Severo Ochoa Spain

Geoffrey **Burnstock**

University College London (UK)

Isabel **Fariñas**

U. Valencia Spain

Christian **Giaume**

Ecole Normale Supérieure (FR)

Helmut **Kettenmann**

Max-Delbrück Centrum (DE)

Frank **Kirchhoff**

University Saarland (DE)

Jose A. **Obeso**

Madrid Spain

Jorge **Oksenberg**

UCSF USA

Anna **Planas**

IDIBAPS Spain

Bruce **Ransom**

U. Washington USA

3. People

The overall strategy of Achucarro establishes a virtuous cycle among excellent research, knowledge transfer and training the new generations of neuroscientist.

In terms of attraction, training and support career development of the professionals working in Achucarro, our People Management model is based on international standards. In particular, regarding the research personnel, the Board of Trustees and the Scientific and Operations direction of the centre endorse the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, fostered by the European Commission.

HR EXCELLENCE IN RESEARCH

In September 2013, the European Commission awarded Achucarro with the **HR Excellence in Research** in recognition to the commitment with the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.

At the end of 2015, Achucarro was composed by 73 people, working for the 8 independent research groups, the research support facilities and the management area.

These are the eight Principal Investigators:

Laboratory of Neural Stem Cells and Neurogenesis

Juan Manuel Encinas

Group Leader

Ramon y Cajal Fellow

PhD Universidad Complutense de Madrid – Instituto Cajal (Spain), 2003

Laboratory of Ultrastructural and Functional Neuroanatomy of the Synapse

Pedro Grandes

Group Leader

Full Professor in Anatomy and Human Embryology Department of Neurosciences (UPV/EHU)

PhD University of the Basque Country (UPV/EHU), 1986

Laboratory of Neurobiology

Carlos Matute

Scientific Director and Group Leader

Full Professor in Anatomy and Human Embryology

Department of Neurosciences (UPV/EHU)

PhD University of Zaragoza (Spain), 1982

Laboratory of Functional Neuroanatomy

Jose Julio Rodríguez Arellano

Group Leader

Ikerbasque Research Professor (UPV/EHU)

PhD Universidad Complutense de Madrid (Spain), 1995

Laboratory of Glial Cell Biology

Amanda Sierra

Group Leader

Ramon y Cajal Fellow

PhD Universidad Complutense de Madrid (Spain), 2003

Laboratory of Neurogenomics

Koen Vandenbroeck

Group Leader

Ikerbasque Research Professor (UPV/EHU)

PhD University of Leuven (Belgium), 1993

Laboratory of Pathophysiology

Alexej Verkhratsky

Adjunct Scientific Director and Group Leader

Ikerbasque Research Professor (UPV/EHU)

PhD Bogomoletz Institute of Physiology (Kiev, Ukraine), 1986

Full Professor in Neurophysiology (University of Manchester)

Laboratory of GTPases and Neurosignalling

Jose Luis Zugaza

Group Leader

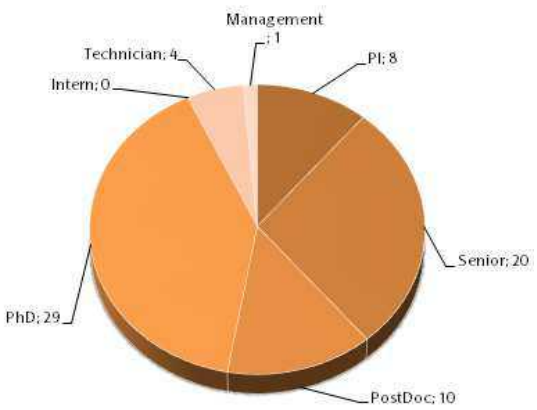
Ikerbasque Research Professor (UPV/EHU)

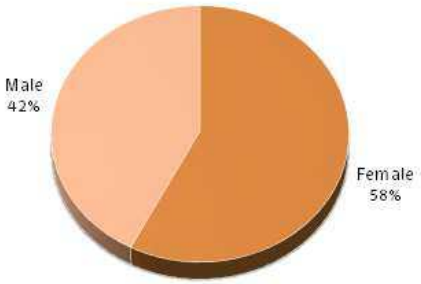
PhD Universidad de Santiago de Compostela (Spain), 1993

ACHUCARRO STAFF (2015/12)

Oihane **Abiega** *(PhD Student)* Elena **Alberdi** *(Senior Researcher)* **Iraide Alloza** *(Senior Researcher)* Alain **Artaso** *(PhD Student)* Ianire **Astobiza** *(Postdoctoral Fellow)* Sol **Beccari** *(PhD Student)* Mónica **Benito** *(PhD Student)* Itziar **Bonilla** *(PhD Student)* Ianire **Buceta** *(PhD Student)* Josune **Canduela** *(Postdoctoral Fellow)* Manuel **Canedo** *(PhD Student)* Estibaliz **Capetillo** *(Senior Researcher)* Fabio **Cavaliere** *(Senior Researcher)* Juan Carlos **Chara** *(Technician)* Raffaela **Cipriani** *(Postdoctoral Fellow)* Abraham **Cisneros** *(Postdoctoral Fellow)* Irune **Díaz** *(PhD Student)* María **Domercq** *(Senior Researcher)* Izaskun **Elezgarai** *(Senior Researcher)* Juan Manuel **Encinas** *(Group Leader)* Laura **Escobar** *(Technician)* Enmanuela **Gardena** *(PhD Student)* Inma **Gerrikagoitia** *(Senior Researcher)* Jon **Gejo** *(PhD Student)* Haize **Goikuria** *(PhD Student)* Paloma **Gómez** *(PhD Student)* Sonia **Gómez** *(Senior Researcher)* Hazel **Gómez** *(Technician)* Pedro **Grandes** *(Group Leader)* Ana **Gutiérrez** *(PhD Student)* Francisco **Llavero** *(Postdoctoral Fellow)* Andrea **Manterola** *(PhD Student)* Saioa **Marcos** *(Technician)* Soraya **Martín** *(PhD Student)* Luis **Martínez Millán** *(Senior Researcher)* Susana **Mato** *(Senior Researcher)* Carlos **Matute** *(Group Leader and Scientific Director)* Jorge **Mena** *(PhD Student)* Juan **Mendizabal** *(Senior Researcher)* Carolina **Ortiz** *(PhD Student)* Sandra **Osés** *(Project Assistant)* Aitor **Palomino** *(Postdoctoral Fellow)* Iñaki **Paris** *(PhD Student)* Oier **Pastor** *(PhD Student)* Sara **Peñasco** *(PhD Student)* Fernando **Pérez-Cerdá** *(Senior Researcher)* Alberto **Pérez-Samartín** *(Senior Researcher)* José Ramón **Pineda** *(Senior Researcher)* Nagore **Puente** *(Senior Researcher)* Tania **Quintela** *(PhD Student)* Almudena **Ramos** *(Senior Researcher)* Paula **Ramos** *(PhD Student)* Leire **Reguero** *(Senior Researcher)* Irantzu **Rico** *(Postdoctoral Fellow)* Jose **Riera** *(Postdoctoral Fellow)* José Julio **Rodríguez Arellano** *(Group Leader)* Naiara **Royo** *(PhD Student)* Asier **Ruiz** *(Postdoctoral Fellow)* Jaime **Sagarduy** *(General Manager)* María Victoria **Sánchez** *(Senior Researcher)* Victor **Sánchez** *(PhD Student)* Rafael **Sarría** *(Senior Researcher)* Amanda **Sierra** *(Group Leader)* Virginia **Sierra** *(PhD Student)* Nerea **Ugidos** *(PhD Student)* Andoni **Urtasun** *(PhD Student)* Roberto **Valcárcel** *(PhD Student)* Jorge **Valero** *(Senior Researcher)* Koen **Vandenbroeck** *(Group Leader)* Alexei **Verkhratsky** *(Group Leader)* Ane **Wissenbach** *(Postdoctoral Fellow)* Alazne **Zabala** *(PhD Student)* Jose Luis **Zugaza** *(Group Leader)*

Staff

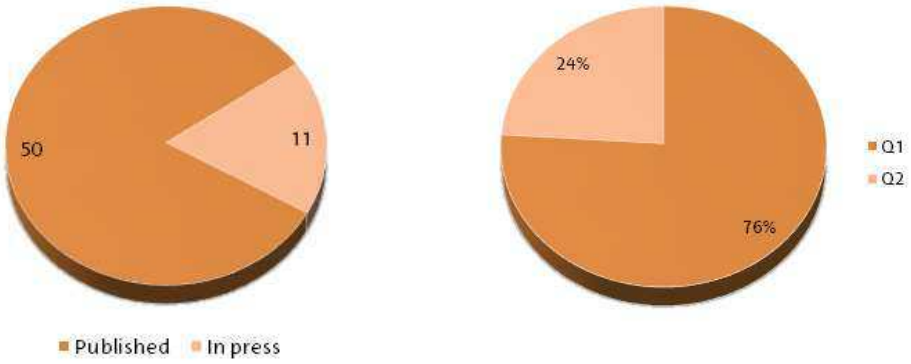




4. Research

Our researchers managed to publish a total of 50 publications in peer-review journal, 41 of them were original articles and 9 review. 76% of these publications are listed in journals on the first quartile of the areas research we work on.

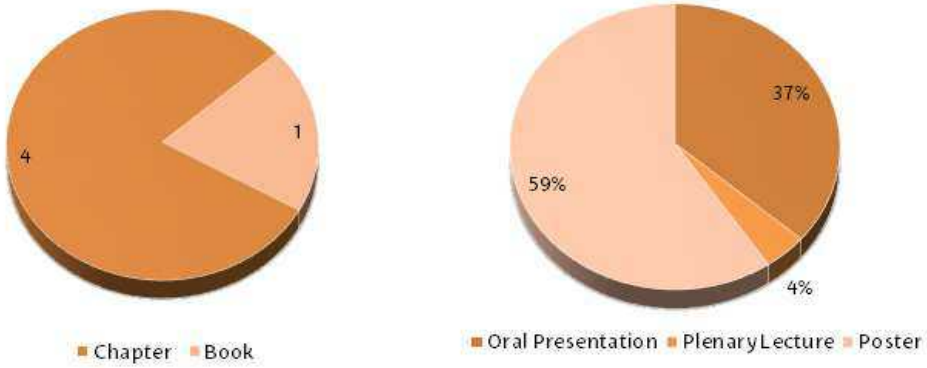
Papers



We also authored one book and four chapters in book edited by other colleagues.

Attendance at conferences and participation in scientific forums has involved oral presentations (35) and plenary lectures (4), as well as posters (57).

Books and Congresses



HIGHLIGHTS IN RESEARCH OUTCOMES

Epilepsy has been found to reduce the generation of new neurons

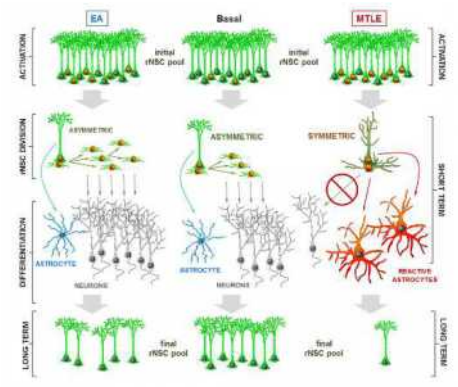
Two of our Group Leaders, Amanda Sierra and Juan Manuel Encinas published a "*Cell Stem Cell*" paper with their discovery of **a new property of hippocampal neural stem cells** by using an epilepsy model in genetically modified mice.

"Neuronal Hyperactivity Accelerates Depletion of Neural Stem Cells and Impairs Hippocampal Neurogenesis"

Amanda Sierra, Soraya Martín-Suárez, Roberto Valcárcel-Martín, Jesús Pascual-Brazo, Sarah-Ann Aelvoet, Oihane Abiega, Juan José Deudero, Amy L. Brewster, Irantzu Bernales, Anne E. Anderson, Veerle Baekelandt, Mirjana MaletićcSavatic and Juan M. Encinas

Cell Stem Cell 16, 1–16, May 7, 2015

Using an epilepsy model in genetically modified mice, the researchers have discovered that hippocampal neural stem cells stop generating new neurons and are turned into reactive astrocytes, a cell type that promotes inflammation and alters communication between neurons. This research work has also made it possible to confirm the hypothesis in a previous piece of research by these researchers; this hypothesis established that even though neuronal hyperexcitation does not go as far as to cause convulsions, it does induce the massive activation of neural stem cells and their resulting premature exhaustion; as a result, neurogenesis (generation of new neurons) in the hippocampus ends up chronically reduced.



Even though the work has been carried out on experimental animals, this discovery has clear implications in clinical practice and in the quest for new therapies for epilepsy given that the generation of new neurons (neurogenesis) is a process that is negatively affected in epileptic seizures located in the hippocampus.

"If we can manage to preserve the population of neural stem cells and their capacity to generate new neurons in humans, it may be possible to prevent the development of certain symptoms associated with epilepsy and very likely to mitigate the damage that is caused in the hippocampus," pointed out Juan Manuel Encinas.

HIGHLIGHTS IN RESEARCH OUTCOMES

A research group of Achucarro and the UPV/EHU gets one of the WOP Funding 2015 projects

The *WOP Foundation*, based in Bilbao, is a non-for-profit organization established by the parents of a kid with a *leukodystrophy*.

Their **WOP Funding** initiative, that has so far allocated 260.000 euros, is an open call to foster brain research. A panel of independent experts from the "*Institute of Health Carlos III*", an investigation institution dependent by the Ministry of Health of Spain evaluated these proposals.

The Project entitled "*Evaluating the Therapeutic Potential of Endocannabinoid Hydrolysis Inhibitors in Myelin Diseases*" has been one of the two projects that have been awarded in the 2015 call of the WOP Funding international call.

In the picture, Carlos Matute (Achucarro and UPV/EHU) and Mikel Rentería (WOP Foundation).

The hypothesis of the project is that drugs that prevent the degradation of one of the most abundant cannabinoid compounds in the body (the so-called 2-AG) will increase the ability of this compound to activate the endocannabinoid brain, and this could have beneficial effects in patients with demyelinating diseases. For this purpose, the research team will study the protective and reparative effectiveness of myelin in drugs that inhibit each of the proteins in animal models with myelin damage.

This project is headed by Susana Mato and Carlos Matute, researchers of Achucarro and the Department of Neurosciences of the University of the Basque Country (UPV/EHU).

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5. Knowledge Transfer

Achucarro collaborates with 3 Masters programmes organized and coordinated by the University of the Basque Country (UPV/EHU):

- Neuroscience
- Molecular Biology and Biomedicine
- Pharmacology, Development, Assessment and Rational Use of Medicines

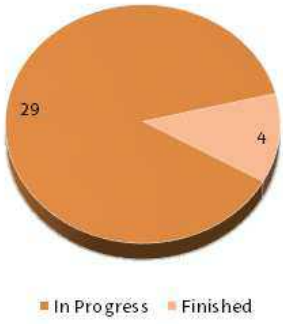
And also coordinate the Doctorate Programme on Neurosciences, organized together with the Universities of Coruña (Galicia), Castilla – La Mancha, Pablo de Olavide (Seville) and Rovira I Virgili (Catalonia).

This qualification is recognised at level 4 in the Spanish Framework of Higher Education Qualifications (MECES) and corresponds to level 8 of the European Qualifications Framework (EQF), according to Royal Decree 22/2015 of 23rd January 2015 (BOE Spanish Official Gazette 07/02/2015)

PHD THESIS

In 2015 four PhD theses have been completed and successfully defended.

Congratulations to our colleagues Ibone, Ricardo, Ane and Bakarne.



- Ibone Saralegui Prieto
  "Análisis de la Activación Neuronal Mediante Resonancia Magnética Funcional (fMRI) en Pacientes Disléxicos"
- Ricardo Elorriaga García
  "Localización por Imagen de Alta Resolución del Sistema Cannabinoide Endógeno en la Mitocondria del Músculo Estriado de Roedor"
- Ane Wyssenbach
  "Mecanismos moleculares implicados en la astrogliosis en la enfermedad de Alzheimer"
- Bakarne Urzelai Lopez de Aberasturi
  "Regulación de las GTPasas de la familia Ras y la viabilidad de neuronas dopaminérgicas en respuesta a la señalización purinérgica"

SEMINARS

In 2015 we organised 22 Achucarro Seminars.

January 19
"McArdle Disease. What have we learnt from the murine model?"
Tomás Pinos Figueras
Vall d'Hebron University Hospital (Barcelona)

January 30
"Decentralizing the dogma in Alzheimer's disease"
Jimena Baleriola
Taub Instiute for Research on Alzheimer's Disease and the Aging Brain, Columbia University (USA)

February 27
"Tackling protein misfolding in neurodegeneration: autophagy and molecular chaperones"
María Jiménez Sánchez
Cambridge Institute for Medical Research (UK)

March 06
"New insights into the neuroprotective action of the CB1 cannabinoid receptor"
Manuel Guzman
Universidad Complutense de Madrid (Spain)

March 13
"Synaptogenesis to prevent glioblastoma-induced neurodegeneration"
Sergio Casas Tintó
Cajal Institute (Madrid, Spain)

May 15
"Understanding microglial proliferation in chronic neurodegenerative diseases"
Diego Gómez Nicola
Centre for Biological Sciences | University of Southampton (UK)

May 29
"Role of the LHb in the genesis of depressive disorders and formation of aversive memories"
Joaquín Piriz
Instituto de Fisiología y Biofísica (IFIBIO) "Houssay", Universidad de Buenos Aires (UBA-CONICET) [Argentina]

June 04
"Understanding Parkinson's disease through the use of a humanized dynamic in vitro model"
Antonella Consiglio
Institute of Biomedicine of the University of Barcelona (Spain)






June 12
"Neuronal hyperactivity accelerates depletion of neural stem cells and impairs hippocampal neurogenesis"
JM Encinas | A Sierra
Achucarro Basque Center for Neuroscience & UPV/EHU

June 19
"Chloride channel dysfunction in MLC disease"
Sònia Sirisi
Universidad de Barcelona (Spain)

June 26
"Intracerebral injections of human brain extracts with Alzheimer's disease and corticobasal degeneration induce tau pathology in a transgenic mouse model"
Susana Boluda
CNDR - University of Pennsylvania (USA)

July 09
"Digestion of Fibrilar Amylod-Beta by Secreted Lysosomal Enzymes"
Santiago Solé Domènech
Weill Cornell Medical College (NY, USA)

September 18
"Understanding the evolution of the neocortex through embryonic development"
Fernando García-Moreno
Medical Sciences Division, University of Oxford (UK)

October 09
"Un nuevo abordaje para la neuroprotección: atrapadores de glutamato"
José Castillo Sánchez
U. Santiago de Compostela & Instituto de Investigación Sanitaria de Santiago (IDIS)

October 16
"Estudios moleculares en temblores familiares"
Jose Félix Martí Massó
Hospital U. Donostia & UPV/EHU

October 23
"Dopamine transporter regulation and the vulnerability of dopaminergic neurons"
Tomás González Hernández
University of La Laguna, Centre for Biomedical Research of the Canary Islands (Spain)

November 13
"Towards a mechanistic understanding of risk factors for Alzheimer's disease"
Ángel Cedazo-Mínguez
Karolinska Institutet (Huddinge, Sweden)






November 20
"Alternative lengthening of telomeres in glioma stem-like cells"
Maya Jeitany
CRBM [CNRS-U. Montpellier] (France)

November 27
"Signals and factors controlling stem cell activity in the adult brain"
François Guillemot
The Francis Crick Institute, Mill Hill Laboratory (London, UK)

December 04
"Synaptic and extrasynaptic neuron-glia interactions"
Alexey Semyanov
UNN Institute of Biology and Biomedicine - University of Nizhny Novgorod (Russia)

December 11
"Major role of Aurora B in the regulation of tunneling nanotubes (TNT) formed by glioma stem cells"
José Ramón Pineda Martí
Achucarro Basque Center for Neuroscience

December 18
"Prion and prion-like diseases. Looking for their niche in the realm of infectious diseases"
Jokin Castilla
CIC bioGUNE (Derio)






Highlights in dissemination outcomes

Glia Meeting 2015 Bilbao, the biggest and the best so far

Achucarro was the host organisation of the XII European Meeting on Glial Cell Function in Health and Disease. The first edition of this meeting was 25 years ago, so it has become the reference congress of our area of research, the glia.

More than 1200 participants (65% of them experienced researchers and 30% early stage researchers) visited Bilbao from July 14 to 18th for this edition that gathered 30 symposia, 150 oral communications, and the presentation of more than 670 research works.

The plenary speakers were some of the most influential colleagues of the area: Charles ffrench-Constant (Edinburgh, UK), Maiken Nedergaard (Copenhagen, Denmark), Stéphane H. R. Oliet (Bordeaux, France), Richard M. Ransohoff (Cambridge, USA), Bruce R. Ransom (Seattle, USA), Mikael Simons (Göttingen, Germany) and Beth Stevens (Boston, USA).

Achucarro was also in charge of organising the "Introductory Course to Glial Cell Biology", a satellite event that always precedes each edition of this congress.

ACHUCARRO FORUM

In 2015 we organised two Achucarro Forum conferences, after organising just one on the precedent years. The reason are, on the one hand, the encouraging reception from the audience of the previous editions, and in the other hand, our will to increase social awareness on the importance of the brain, and the advance of human knowledge about this organ and the diseases it suffers.

Besides, we count with excellent partners in this initiative: the Chair for Science Culture of the UPV/EHU; and the Basque Public Media Group (EiTB), which provide media coverage and support.

March 5th
Bizkaia Aretoa (Bilbao)

Manuel Guzmán
Full Professor of Biochemistry and Molecular Biology at the Complutense University of Madrid (Spain)

How does cannabis perform in our brain?

October 8th
Bidebarrieta Kulturgunea (Bilbao)

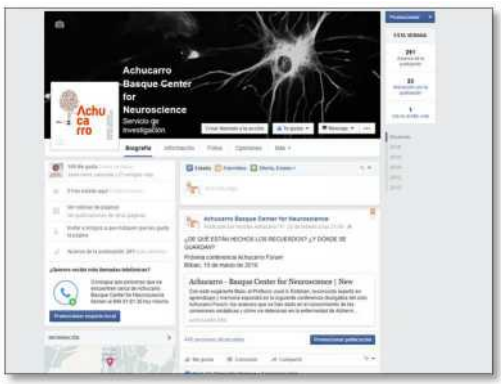
José Castillo
Full Professor of Neurology at the University of Santiago de Compostela and Head of Service at the University Hospital of Santiago de Compostela.

Stroke:
A challenge for the medicine of the XXI century

PUBLIC OUTREACH AND SOCIAL MEDIA

Achucarro maintains a strategy of being active and present in many of the Internet based social media platforms, as a way to spread the knowledge and social awareness of our centre and its objectives.

Website www.achucarro.org	30 news, 22 seminars posted 17.380 visits 76.960 page views 60% of new visitors 40% of returning visitors 67% visits from Spain; 33% visits international 17% of the visits from mobile devices
Blog Neurozientzian	12 articles posted 4.200 visits 5.710 page views 92% of new visitors; 8% of returning visitors 37% visits from Spain; 63%
Twitter AchucarroNeuro	793 followers 4.134 tweets and retweets
Facebook Achucarro.org	178 people engaged (likes) 54 posts

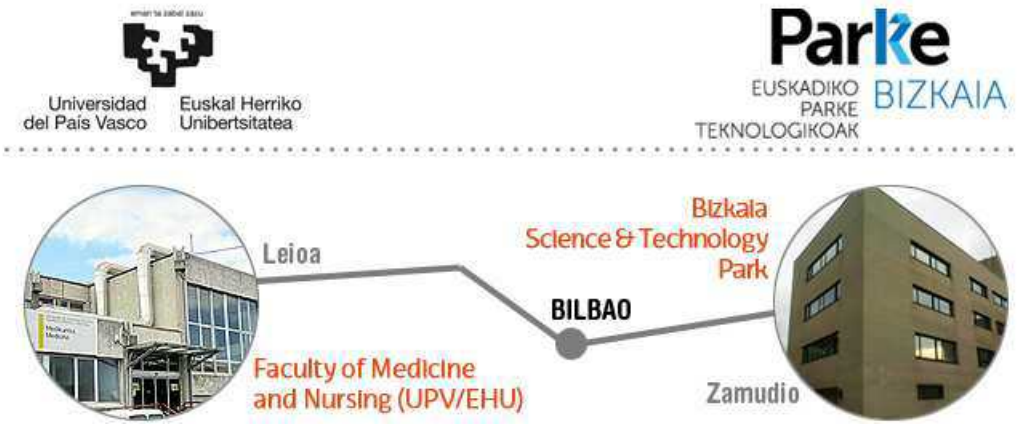


III BASQUE-CHILEAN BIOMEDICAL RESEARCH MEETING, PONTIFICAL CATHOLIC UNIVERSITY FROM CHILE AND UNIVERSITY OF BASQUE COUNTRY.

The Pontifical Catholic University (PUC) from Santiago de Chile organised, from November 30th to December 1st the third edition of the Basque-Chilean Biomedical Research Meeting in Chile.

A delegation of researchers from the Basque Bioscience community, with the presence of Juan Manuel Encinas and Vicky Sánchez from Achucarro participated in this edition of this scientific event that strives to foster the relationships and collaboration among Basque and Chilean colleagues.

This meeting, as the previous editions held in Santiago de Chile and Bilbao respectively, contributed to the establishment of formal collaboration agreements between both universities and also between the Interdisciplinary Center for Neuroscience (neuroUC) and Achucarro.



6. Infrastructures and Equipment

The centre's headquarters are located in Building #205 of the Bizkaia Science and Technology Park, in the town of Zamudio, close to Bilbao and Leioa, where the university campus is. The research groups of the centre are located both, in the Science and Technology Park of Bizkaia, Zamudio and at the university campus.

Achucarro currently has equipment and technologies to develop: ***Cellular and Molecular Neurobiology; Primary and Organotypic Cultures; In vitro Models; Classical Morphometry and Stereology; immunofluorescence; Immunochemistry and Immunohistochemistry; Electrophysiology; Calcium, Epifluorescence, Advanced Light (Confocal, Super-resolution) and Electron microscopy; Genotyping and Functional Genomics; Sequencing; qPCR and qRT-PCR; Flow Cytometry and Fluorescence-Activated Cell Sorting; Cerebellar Organotypic Culture for Neuroinflammation; Reporter constructs & recombinant expression; Stereotaxic Surgery and Stereology-based quantification; ...***

7. Achucarro in figures

STRATEGY AND MANAGEMENT	2013	2014	2015
% of publications in neurosciences over the total in the Basque Country (previous year)	4%	3%	5%
% of publications from Achucarro over the total neurosciences in the Basque Country	38%	38%	22%
H-index of Achucarro	4	8	10
% compliance of Management Plan	99%	95%	97%
Number of meetings of the Board of Trustees	3	2	4
Annual Budget (Million Euros)	0,67	1,22	2,20
Rate of funding different from Basque Government	3%	25%	20%

PARTNERSHIPS	2013	2014	2015
Number of strategic agreements (accumulated)	3	5	6
Number of institutional agreements (accumulated)	6	6	7
Number of operational agreements (new)	2	2	5

PEOPLE	2013	2014	2015
Number of persons involved in Achucarro	50	68	73
Number of directly contracted staff (FDE)	2	6,5	11,4
Number of persons in practice work	1	0	0
Number of researchers	45	63	67
Number of principal investigators	7	8	8
Number of senior researchers	8	16	20
Number of postdoctoral researchers	10	10	10
Number of PhD students	16	24	29
Number of Master students	1	5	7
Number of technicians	4	4	4
Number of staff	1	1	2
Number of Ikerbasque Researchers Professors	6	6	6
Number of Ikerbasque Researchers Fellows	1	2	3
Number of Ramon y Cajal Fellows	0	1	3

RESEARCH	2013	2014	2015
Number of research groups	7	8	8
Number of publications by groups	53	45	50
Number of publications by groups (Q1)	46	38	38
Number of participations in congresses	66	69	96
Number of books and chapters	6	16	5
Number of patents (applications)	0	0	0
Number of patents (accepted)	2	0	0
Attracted Funding (Millions of Euros)	2,4	2,2	3,2
Number of PhD theses (in progress)	16	20	29
Number of PhD theses (completed)	4	4	4

KNOWLEDGE TRANSFER/TRAINING	2013	2014	2015
Number of Achucarro seminars	25	23	22
Number of Congresses, Conferences	1	2	3
Number of Training events	1	2	1
Number of Dissemination events	1	2	2
Number of attendees per event (mean)	285	190	200

KNOWLEDGE TRANSFER / DISSEMINATION	2013	2014	2015
Press releases	3	5	7
Followers in Twitter	309	505	793
Tweets in Twitter	974	2.432	4.134
Number of news published on the website	42	28	30
Total visits to the website	10.277	11.849	17.380
Visits from Spain	7.497	7.897	11.511
% visits from Spain	73%	67%	67%
% visits from abroad	27%	33%	33%
Returning visitors to website	40%	43%	40%
Ratio of new visitors to website	60%	57%	60%

INFRASTRUCTURE AND EQUIPMENT	2013	2014	2015
Number of Strategic and Singular Equipment	2	4	9

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