September 29, 2022

FRANCISCO BORREGO

CURRICULUM VITAE

Education and Training:

- 1979-1985: M.D. University of Córdoba, School of Medicine, Spain.
- 1990-1994: Ph.D. in Immunology. University of Córdoba, School of Medicine.
- 1993-1994: Volunteer, Dana-Farber Cancer Institute, Boston, MA.
- 2000: Cold Spring Harbor Course on Eukaryotic Gene Expression.
- 2003: The Foundation for Advance Education in the Sciences, Inc. at the National Institutes of Health. Course TRAC23: Flow Cytometry.
- 2015: Summer Course, University of the Basque Country. "Nuevos retos en investigación Biomédica: terapia celular, telemedicina,.". Bilbao, Spain.
- 2015-2016: National Heart, Lung and Blood Institute, National Institutes of Health. Production of clinical grade natural killer cells. Bethesda, MD, USA.
- 2017: Certificate of Training for the design of projects and procedures with experimental animals (Function d ECC / 566/2015).
- 2018: Summer Course, University of the Basque Country. "XX aniversario de las células madre embrionarias humanas: pasado, presente y futuro". Bilbao, Spain.

Chronology of Employment:

- 1986-1987: General medical practitioner in the army during military service.
- 1987-1989: General medical practitioner in a regional hospital, Iznájar, Córdoba, Spain.

- 1990-1994: Graduate Fellowship of Ministry for Science and Education of Spain.

- 1995-2000: Visiting Fellow, Laboratory of Allergic Diseases, National Institute of Allergy and Infectious Diseases, National Institute of Health, Bethesda, MD.

- 2000-2007: Staff Scientist, Laboratory of Allergic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

- 2007-2008: Staff Scientist, Laboratory of Immunogenetics, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

- 2008-2013: Senior Staff Fellow (Tenure Track position), Division of Monoclonal Antibodies, Center for Drug Evaluation and Research, Food and Drug Administration, Bethesda, MD.

- 2008-2013: Volunteer, Laboratory of Immunogenetics, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD.

- 2013-present: Ikerbasque Research Professor. Ikerbasque, Basque Foundation for Science. Biocruces Bizkaia Health Research Institute.

- 2022-present: Volunteer, Spanish Association Against Cancer (AECC-Asociación Española Contra el Cáncer).

Teaching Experience:

- 1989-1991: Honorary Lecturer in Immunology. University of Córdoba, Spain.

- 1993-1995: Honorary Lecturer in Immunology. University of Córdoba, Spain.

- 1996-2008: Training and supervision of secondary school students that participate in the Summer Internship Program in Biomedical Research of the National Institute of Allergy and Infectious Diseases, National Institutes of Health.

- 1998-2013: Training and supervision of recent college graduates that participate in the Post baccalaureate Intramural Research Training Program of the National Institutes of Health and of the Food and Drug Administration.

- 2001-2013: Training and supervision of postdoctoral and post baccalaureate fellows that participate in the Postdoctoral Intramural Research Training Program at NIH and FDA.

- 2010: Accreditation certificate that entitles me to participate in contests for access to the Body of University Professors in Spain.

- February, 2014. Invited Lecturer, Master in Molecular Biology and Biomedicine. "The CD300 molecules: an emerging family of regulators of the Immune System". Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

- October, 2014. Invited Lecturer, I Course in Flow Cytometry. "Fenotipado multicolor, ciclo celular, apoptosis, proliferación y viabilidad celular. Breve descripción y aplicabilidad de la citometría de flujo". Fundación Inbiomed, Donostia-San Sebastián.

- February, 2015. Invited Lecturer, Master in Molecular Biology and Biomedicine. "Cancer immunotherapy: increasing the therapeutic potential of natural killer cells against tumors". Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

- March, 2015. Invited Lecturer, Master in Biomedicine. "Cancer immunotherapy: increasing the therapeutic potential of natural killer cells against tumors". Universidad de Cádiz.

- March 2015. Invited Lecture, Workshop de Citometría de Flujo – Organizado por Inbiomed y BD Biosciences. "Caso práctico". Fundación Inbiomed, Donostia-San Sebastián.

- June, 2015. Invited Lecturer, II Course in Flow Cytometry. "Fenotipado multicolor, ciclo celular, apoptosis, proliferación y viabilidad celular. Breve

descripción y aplicabilidad de la citometría de flujo". Instituto de Investigación Sanitaria IDIVAL. Santander.

- 2016-Present. External Professor of the Doctorate Program in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea.

- February, 2017. Invited Lecturer, Master in Molecular Biology and Biomedicine. "Cancer Immunotherapy". Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

- July, 2017. Director and Lecturer, Summer Course: "Immunology, Immunopathology and Immunotherapy". XXXVI Edition of Summer Courses. Universidad del País Vasco/Euskal Herriko Unibersitatea.

- February, 2018. Invited Lecturer, Master in Molecular Biology and Biomedicine. "Cancer Immunotherapy". Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

- June, 2018. Invited Lecturer, V Course in Flow Cytometry. "Citometría de flujo en el día a día de un laboratorio de investigación en Inmunología". Instituto de Investigación Sanitaria IDIVAL. Santander.

- July, 2018. Lecturer, Summer Course: "Immunology, Immunopathology and Immunotherapy". XXXVII Edition of Summer Courses. Universidad del País Vasco/Euskal Herriko Unibersitatea.

- August, 2018. Lecturer, Summer Course: "Immunology and Immunotherapy: tools in the XXI century". Universidad Internacional Menéndez Pelayo.

- October 2018-Present. External Professor of the Doctorate Program on Research in Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea.

- February, 2019. Invited Lecturer, Master in Molecular Biology and Biomedicine. "Cancer Immunotherapy". Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

- May, 2019. Invited Lecturer, VI Course in Flow Cytometry. "Citometría de flujo en el día a día de un laboratorio de investigación en Inmunología". Instituto de Investigación Sanitaria IDIVAL. Santander.

- August, 2019. Lecturer, Summer Course: "II Course on Advances in Immunology and Immunotherapy". Universidad Internacional Menéndez Pelayo, Santander.

- August 2020. Lecturer, Summer Course: "Inmunología en la Pandemia Covid-19". Universidad Internacional Menéndez Pelayo, Santander.

- November 2020. Lecturer: “I Curso de inmunocitometría diagnóstica”. Hospital Universitario Fundación Jiménez Díaz, Madrid.

- July 2021. Lecturer, Summer Course: “Escuela de Inmunología en tiempos de pandemia”. Universidad Internacional Menéndez Pelayo, Santander.

- July 2022. Lecturer, Summer Course: “V Escuela de Inmunología e Inmunoterapia en tiempos de pandemia”. Universidad Internacional Menéndez Pelayo, Santander.

Master and Bachelor Degree Thesis (Director and Supervisor):

1. January 2015-June 2015. Master´s Thesis. Student: Irati Odriozola. “Molecular Basis of Cytokine-Induced Memory-Like NK Cells”. Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

2. January 2016-June 2016. Master´s Thesis. Student: Andrea Gredilla. “Role of IL-12, IL-15 and IL-18 on cytokine-induced memory-like (CIML) NK cells effector functions and proliferation”. Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

3. January 2016-June 2016. Master´s Thesis. Student: Javier Gonzalez. “Effect of ruxolitinib in the generation of human cytokine-induced memory-like (CIML) Natural Killer (NK) cells”. Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

4. January 2017-June 2017. Master´s Thesis. Student: Iñigo Terrén. “Role of Jak1 and Jak2 in the generation of cytokine-induced memory-like (CIML) NK cells”. Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

5. February 2017-May 2017. Bachelor Degree Thesis. Student: Leire Gamboa Urquijo. “Expression of the CD300a inhibitory receptor on T cells from HIV infected patients”. Bachelor Degree in Biochemistry and Molecular Biology. Universitat Rovira i Virgili. Tarragona, Spain.

6. January 2019-June 2019. Master´s Thesis. Student: Alicia Izquierdo. “NKp80 receptor as a new marker to identify the rare human circulating CD56- NK cells”. Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

7. January 2021-June 2021. Master´s Thesis. Student: Idoia Fernández Puertas. "Fatty acid metabolism in cytokine-induced memory-like NK cells". Master in Molecular Biology and Biomedicine. Universidad del País Vasco/Euskal Herriko Unibersitatea-Universidad de Cantabria.

8. November 2021-June 2022. Bachelor Degree Thesis. Student: Diego Polanco Alonso. "Decidualización de linfocitos NK: Caracterización fenotípica y funcional". Bachelor Degree in Biochemistry and Molecular Biology. Universidad del País Vasco/Euskal Herriko Unibersitatea. Leioa, Spain.

9. January 2022-June 2022. Bachelor Degree Thesis. Student: Julen García San Miguel. "Regulación de la expression de las moléculas CD300 en eosinófilos". Bachelor Degree in Biochemistry and Molecular Biology. Universidad del País Vasco/Euskal Herriko Unibersitatea. Leioa, Spain.

PhD Thesis (Director and Supervisor):

1. Joana Vitallé. PhD Thesis Title: Human CD300 receptors expression, regulation and function in the immune system. Implication in human immunodeficiency virus type 1 infection. PhD Thesis defended on December 2nd, 2019. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Score: Sobresaliente Cum Laude y Premio Extraordinario de Doctorado.

2. Ane Orrantia Robles. PhD Thesis Title: Natural killer cell subset reconstitution after autologous hematopoietic stem cell transplantation in multiple myeloma patients. PhD Thesis defended on March 28th, 2022. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Score: Sobresaliente Cum Laude.

3. Idoia Mikelez Alonso. PhD Thesis Title: Natural Killer (NK) cells and cancer: nanotechnology-based new methods development for the enhancement of antitumor immunotherapy efficacy. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Status: In Progress.

4. Iñigo Terrén Martínez. PhD Thesis Title: Preactivación de células NK humanas con citoquinas: requerimientos para unas funciones efectoras aumentadas. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Status: In Progress.

5. Gabirel Astarloa Pando. PhD Thesis Title: Reconstitución de la población de células NK tras el trasplante de precursores hematopoyéticos autólogo. Identificación de biomarcadores que se asocien con el pronóstico de la enfermedad. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Status: In Progress.

6. Ainhoa Amarilla Irusta. PhD Thesis Title: Implicación de la plasticidad de las células NK en el tratamiento contra el cáncer. University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibersitatea). Status: In Progress.

PhD Thesis Committees:

1. February 2004: "Family studies demonstrate the extensive diversity of killer cell immunoglobulin receptor allele-level haplotypes". PhD thesis defended by Christine M.G. Schammel at Georgetown University, Graduate School of Arts and Sciences.

2. March 2007: "Functional polymorphisms in the D1-D2 domain of killer immunoglobulin-like receptors". PhD thesis defended by Christopher James VandenBussche at Georgetown School of Medicine, Georgetown University.

3. January 2014: "The role of plasmacytoid dendritic cells in the spontaneous control of HIV infection". PhD thesis defended by Kawthar Machmach Kesmy at University of Seville, Spain.

4. March 2014: "Development of a model system to study NK cell hyporesponsiveness". PhD thesis defended by Gema Romera Cárdenas at the National Center of Biotechnology, Madrid Autonomous University, Spain.

5. October 2014: "Immune response in infection: role of human NKG2H receptor and study of HLA-E restricted lymphocytes". PhD thesis defended by Daniela Dukovska at the National Center of Biotechnology, Madrid Autonomous University, Spain.

6. October 2014: "Efecto de la inmunosenescencia en el fenotipo y función de poblaciones de linfocitos citotóxicos". PhD thesis defended by María del Carmen Campos Fernández at the University of Córdoba, Spain.

7. March 2017: "Estudio de la función de la podocalicina en la linfomagénesis de células B humanas". PhD thesis defended by Estíbaliz Tamayo Orbegozo at the University of the Basque Country, Spain.

8. June 2017: "Listeriosis cerebral en el modelo murino: patogénesis y prevención". PhD thesis defended by Elisabet Frande Cabanes at the University of Cantabria, Spain.

9. April 2018: "Study of the involvement of antigen cross-presentation in the antitumor activity of immunostimulatory monoclonal antibodies". PhD thesis defended by Alfonso Rodríguez Sánchez-Paulete at the University of Navarra, Spain.

10. September 2018: “Insights into the genetics and biochemistry of signaling adaptor modules and NK cell receptors from study of primary immunodeficiency”. PhD thesis defended by Alfonso Blázquez Moreno at the National Center of Biotechnology, Madrid Autonomous University, Spain.

11. October 2018: “Producción de células natural killer activadas con interleuquina-15 para uso clínico en pacientes pediátricos con cáncer”. PhD thesis defended by María Dolores Corral Sánchez at the Madrid Autonomous University, Spain.

12. December 2018: “Caracterización de pacientes controladores del VIH. Mecanismos implicados en el control espontáneo del VIH y virus de la Hepatitis C”. PhD thesis defended by Beatriz Domínguez Molina at the Universisty of Seville, Spain.

13. April 2019: “Alteraciones genéticas de los receptores Fc gamma y consecuencias funcionales de la ausencia de CD16”. PhD thesis defended by Adriana Patricia Pérez Portilla at the National Center of Biotechnology, Madrid Autonomous University, Spain.

14. January 2020: “Inmunoterapia de células NK para el tratamiento de cáncer colorrectal con mutaciones de resistencia a drogas”. PhD thesis defended by Pilar M. Lanuza Morte at the University of Zaragoza, Spain.

15. November 2020: “Aplicación de nanomateriales al studio y modulación de la respuesta inflamatoria en patologías inflamatorias y cáncer”. PhD thesis defended by Laura Comas Calmet at the University of Zaragoza, Spain.

16. March 2021: “Adaptive NKG2C+ NK cells and cytomegalovirus infection in kidney transplant recipients”. PhD thesis defended by Michelle Ataya at the University Pompeu Fabra, Barcelona, Spain.

17. November 2021: “Role of natural killer cells in the elimination of HIV cellular reservoirs and use of nanotechnology to enhance its function”. PhD thesis defended by Antonio Astorga Gamaza at the Autonomous University of Barcelona, Spain.

18. December 2021: “Plasticity of macrophage responses to activating factors”. PhD thesis defended by Diego Barriales San Miguel at the Complutense University of Madrid, Spain.

Supervisory activities from 2000 to 2008 (NIH):

1. Tolib Sanni. 2001-2004. Pre-IRTA Fellow. Undergraduate studies: Howard University, Washington, DC.

2. Kerima Maasho. 2001-2006. Post-doctoral Fellow. Ph.D.: Karolinska Institute, Stockholm, Sweden.

3. Nicole M. Reynolds. 2003. Summer student.

4. Simana Basu. 2004. Summer student.

5. Jessica Opoku-Anane. 2004-2005. Pre-IRTA Fellow. Undergraduate studies: John Hopkins University, Baltimore, MD.

6. Yelina Alvarez. 2006-2007. Pre-IRTA Fellow. Undergraduate studies: Stanford University, CA.

7. Xiaobin Tang. 2004-2008. Post-doctoral Fellow. Ph.D.: Peking Union Medical College & Chinese Academy of Medical Sciences, Beijing, P.R. China.

8. Sriram Narayanan. 2005-2009. Post-doctoral Fellow. Ph.D.: Indian Institute of Science, Bangalore, India.

9. Rodolfo Silva. 2008-2009. Pre-IRTA Fellow. Undergraduate studies: University of California, Berkeley, CA.

Supervisory activities from 2008-2013 (FDA):

1. Karen Debell. 2008-2011. Microbiologist.

2. Venkateswara Simhadri. 2009-Present. Post-doctoral Fellow. Ph.D.: University of Cologne, Cologne, Germany.

3. John L. Mariano. 2010-2012. ORISE fellow. Undergraduate studies: Cornell University, Ithaca, NY.

4. Ines Perez Camacho. 2010. Guest visitor. M.D. and Ph.D.: University of Córdoba (Spain).

5. Qing Zhou. 2010-2012. IOTF Fellow. Ph.D.: University of Nevada, Reno, NV.

6. Francisca Rodriguez Pacheco. 2011. Guest visitor. Ph.D.: University of Córdoba (Spain).

7. Gregory P. Lang. 2011-2012. ORISE Fellow. Undergraduate studies: Canisius College, Buffalo, NY.

8. Aleksandra Gil-Krzewska. 2012. Contractor. Ph.D.: University of Gdanks (Poland).

9. Antonio Rivero. 2012. Guest visitor. M.D., Ph.D.: University of Córdoba (Spain).

10. Milena Dimitrova. 2012-2013. ORISE Fellow. Undergraduate studies: Berkeley University.

Supervisory activities from 2013-present (Ikerbasque):

1. Olatz Zenarruzabeitia Belaustegui. 2014 – 2023. Postdoctoral Fellow. Ph.D.: University of the Basque Country (Spain).

2. Martin Aznal Begil. 2014 (one month). Student at the Medical School, University of the Basque Country (Spain).

3. Iratxe Zuazo Gaztelu. 2014 (two months). Undergraduate studies: University of the Basque Country (Spain).

4. Joana Vitallé Andrade, 2014 – 2020. Ph.D. student. Undergraduate studies: University of the Basque Country (Spain).

5. Irati Odriozola, 2015 (five months). Master Student. Undergraduate studies: University of the Basque Country (Spain).

6. Javier Gonzalez, 2016 (five months). Master Student. Undergraduate studies: University of the Basque Country (Spain).

7. Andrea Gredilla, 2016 (five months). Master Student. Undergraduate studies: University of the Basque Country (Spain).

8. Idoia Mikelez, 2016 – 2022. Ph.D. student. Undergraduate studies: University of the Basque Country (Spain).

9. Iñigo Terrén, 2017 (five months). Master Student. Undergraduate studies: University of the Basque Country (Spain).

10. Iñigo Terrén, 2017 (five months). BBK-Lanbide Fellowship. Undergraduate studies: University of the Basque Country (Spain).

11. Leire Gamboa, 2017 (three months). Undergraduate Student. Undergraduate studies: University Rovira i Virgili (Spain).

12. Iñigo Terrén, 2018-present. Ph.D. student. Undergraduate studies: University of the Basque Country (Spain).

13. Ane Orrantia, 2018-2022. Ph.D. student. Undergraduate studies: University of the Basque Country (Spain).

14. Christina Pranger, 2019 (three months). Ph.D. student. Undergraduate studies: University of Vienna (Austria).

15. Gabirel Astarloa, 2020 (five months). BBK-Lanbide Fellowship. Undergraduate studies: University of the Basque Country (Spain).

16. Ainhoa Atxa, 2021 (two months). Undergraduate student. Undergraduate studies: University of Navarra (Spain).

17. Gabirel Astarloa, 2021-present. Ph.D. student. Undergraduate studies: University of the Basque Country (Spain).

18. Ainhoa Amarilla Irusta, 2021-Present. Ph.D. student. Undergraduate studies: University of Navarra. (Spain).

19. Diego Polanco Alonso, 2021-2022. (eight months). Undergraduate student. Undergraduate studies: University of the Basque Country (Spain).

20. Julen García San Miguel, 2022. (six months). Undergraduate student. Undergraduate studies: University of the Basque Country (Spain).

21. Inés de Valle, 2022. (two months). Undergraduate student. Undergraduate studies: Autonomous University of Barcelona (Spain).

22. Aritz Tijero, 2022-2023. (eight months). Undergraduate student. Undergraduate studies: University of the Basque Country (Spain).

23. Ian González, 2022-2023. (eight months). Undergraduate student. Undergraduate studies: University of the Basque Country (Spain).

Other supervisory and educational activities:

1. International Day of Immunology. 2016, Talk to High School Students "Cancer Immunotherapy". Colegio Vizcaya, Derio, Spain.

2. Advisor in the 2016-2017 edition of the Zientzia Azoka project (Science Fair), collaborating with young participants in their research projects.

3. International Day of Immunology. 2017, Talk to High School Students "Allergies". Colegio BerrioOtxoa, Bilbao, Spain.

4. In collaboration with the local chapter of AECC (Spanish Association Against Cancer) and the City Hall. 2017, Talk to the general public: "Cancer Immunotherapy". Iznájar, Spain.

5. International Day of Immunology. 2018, Talk at the Hika Ateneo “Cancer Immunotherapy”. Bilbao, Spain.

6. International Day of Immunology. 2019, Talk at the Bidebarrieta Library “Cancer Immunotherapy”. Bilbao, Spain.

7. In collaboration with AECC-Bizkaia during the International Day on Cancer Research. 2019, Talk at the Campos Elíseos Theater “Basis of Immunotherapy: Antibodies against cancer”. Bilbao, Spain.

8. In collaboration with AECC-Iznájar during the European Night of Researchers. 2021, Talk at the Iznájar High School “Our defenses in the fight against cancer and viruses”. Iznájar, Spain.

9. In collaboration with AECC-Iznájar during the European Night of Researchers. 2021, Talk at the Iznájar Public Library “Our defenses in the fight against cancer and viruses”. Iznájar, Spain.

Regulatory Experience:

2008-2013: Chemistry, Manufacturing and Controls (CMC) reviewer at the Division of Monoclonal Antibodies (DMA), Office of Biotechnology Products (OBP), Center for Drug Evaluation and Research (CDER), Food and Drug Administration (FDA).

- Investigational New Drugs (IND): 26.
- Pre-IND: 4.
- Biologics License Applications (BLA): 2.
    - Approved BLA: ADCETRIS™ (brentuximab vedotin). ADCETRIS is a CD30-directed antibody-drug conjugate indicated for the treatment of patients with Hodgkin lymphoma after failure of autologous stem cell transplant or after failure of at least two prior multi-agent chemotherapy regimens in patients who are not ASCT candidates and for the treatment of patients with systemic anaplastic large cell lymphoma after failure of at least one prior multi-agent chemotherapy regimen.
    - Approved BLA: KADCYLA™ (ado-trastuzumab emtansine). KADCYLA™ is a HER2-targeted antibody and microtubule inhibitor conjugate indicated, as a single agent, for the treatment of patients with HER2-positive, metastatic breast cancer who previously received trastuzumab and a taxane, separately or in combination. Patients should have either received prior therapy for metastatic disease or developed disease recurrence during or within six months of completing adjuvant therapy.
- Pre-Approval Inspections: 2.
- Bi-Annual Inspections: 1.

Consulting Experience:

- December 2015. Consultant for Jounce Therapeutics. Cambridge, MA.

Talks, Lectures and Webinars:

1. Invited Lecturer at the Fifth Course on Advanced Immunology: "NK cell receptors involved in target recognition". Córdoba (Spain), 1993.

2. Invited Lecturer at the Lombardi Cancer Center's Tumor Biology Seminar Series: "Recognition of HLA-E/Signal Peptide Complexes by Natural Killer Cell CD94/NKG2 Receptors" Lombardi Cancer Center, Georgetown University Medical Center, Washington, D.C., 1998.

3. Invited Lecturer at the Children's Research Institute Seminar Series: "HLA-E recognition by Natural Killer Cells" Washington, D.C., 1998.

4. Invited Lecturer at the Allergy Clinical Fellows Program, National Institutes of Health, National Institute of Allergy and Infectious Diseases. "Natural Killer (NK) cells: From molecular mechanisms to their role in diseases" Bethesda, MD, 2006.

5. Invited Lecturer at the Workgroup on Human Interferon Zignalling (WHIZ). National Institutes of Health. "Human Th1 cells that express CD300a are polyfunctional and after stimulation up-regulate the T-box transcription factor Eomes". Bethesda, MD, 2009.

6. Invited Lecturer at the Fellow's Clinical Immunology Conference, National Institutes of Health. "Natural Killer Cell Biology". Bethesda, MD, 2011.

7. Invited speaker at the Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC). "Role of the CD300 family of receptors in the innate and adaptive immune response". Córdoba, Spain, 2011.

8. Invited speaker at the Instituto de Biomedicina de Sevilla (IBIS). "Role of the CD300 family of receptors in the innate and adaptive immune response". Sevilla, Spain, 2011.

9. Invited speaker at Biodonostia. "Immunomodulatory receptors: The fact, implications and the hypotheses in HIV pathogenesis and cancer". San Sebastián, Spain, 2011.

10. Invited speaker to the Clinical Immunology Noon Conference Series, National Institutes of Health. "The CD300 family of receptors recognizes lipids and modulates immune cell functions". Bethesda, MD, 2012.

11. Invited speaker at the Uniformed Services University of Health Sciences, Department of Pharmacology Seminar Series. "The CD300 molecules: an emerging family of regulators of the Immune System". Bethesda, MD, 2012.

12. Invited speaker at MedImmune. “The CD300 molecules: an emerging family of regulators of the Immune System”. Gaithersburg, MD, 2013.

13. Invited speaker at Vall d’Hebron Research Institute. “The CD300 molecules: an emerging family of regulators of the Immune System”. Barcelona, Spain, 2013.

14. Invited speaker at BioCruces Health Research Institute. “The CD300 molecules: an emerging family of regulators of the Immune System”. Barakaldo, Spain, 2013.

15. Invited speaker at “Naturimmun” Consortium meeting. “Role of NK cells in the mechanism of action of therapeutic antibodies”. Cambrigde, United Kingdom, 2013.

16. Invited speaker at “BioForo”. “The CD300 molecules: an emerging family of regulators of the Immune System”. CSIC-UPV/CSIC, Consejo Superior de Investigaciones Científicas-Universidad del País Vasco/Euskal Herriko Unibersitatea. Leioa, Spain, 2014.

17. Invited speaker at “Centro Vasco de Transfusión y Tejidos Humanos”. “Role of NK cells in the mechanism of action of therapeutic antibodies”. Galdakao, Spain, 2014.

18. Invited speaker at “Inbiomed”. “Role of NK cells in the mechanism of action of therapeutic antibodies”. Donostia-San Sebastián, Spain, 2014.

19. Invited speaker at the Annual meeting of SEI (Sociedad Española de Inmunología – Spanish Association of Immunologists). “Immunotherapy: Role of NK cells in the mechanism of action of therapeutic antibodies.” Badajoz, Spain, May 2014.

20. Invited speaker at a Symposium on Vaccines: from bench to bedside. “Immunological Basis of Vaccines”. Cruces University Hospital, Barakaldo, Spain, July 2015.

21. Invited Speaker at Immunokluba. “Cancer Immunotherapy”. Cruces University Hospital, Barakaldo, Spain, June 2016.

22. Invited speaker at Reina Sofía Hospital. “NK cell adoptive therapy (Terapia celular adoptiva con células NK)”. In Symposium on “40 years on NK cells”. Córdoba, Spain, June 2016.

23. Invited speaker at Instituto Maimónides de Investigación Biomédica de Córdoba (IMIBIC). “Receptores CD300: papel en la regulación de la activación de basófilos mediada por IgE”. Córdoba, Spain, September 2016.

24. Invited speaker at BIOSPAIN 2016. Symposium Cancer Immunotherapy. NK cell-based cancer immunotherapy". Barakaldo, Spain, September 2016.

25. Invited speaker at X Congress of Catalan Society of Immunology. "NK cell-based cancer immunotherapy". Barcelona, Spain, November 2016.

26. Invited Speaker at Immunokluba. "NK cell-based cancer immunotherapy". Cruces University Hospital, Barakaldo, Spain, November 2016.

27. Invited speaker at IMIM (Institut Hospital del Mar d'Investigacions Mèdiques). "The CD300 molecules: an emerging family of regulators of the Immune System". Barcelona, Spain, January 2017.

28. Invited speaker at CIC bioGUNE. "NK cell-based cancer immunotherapy". Zamudio, Spain, May 2017.

29. Invited speaker at the XV Congress of Spanish Association of Bank of Tissues (Asociación Española de Bancos de Tejidos – AEBT). "Immunotherapy with umbilical cord derived NK cells (Inmunoterapia con células NK derivadas de cordón umbilical)". Bilbao, Spain, June 2017.

30. Invited speaker at Welcome Centre for Human Genetics, University of Oxford. "The CD300 molecules: an emerging family of regulators of the Immune System". Oxford, UK, October 2017.

31. Invited speaker at Centro Nacional de Microbiología. "The CD300 molecules: an emerging family of regulators of the Immune System". Majadahonda, Spain, May 2018.

32. Invited Speaker at Immunokluba. "The CD300 molecules: an emerging family of regulators of the Immune System". Cruces University Hospital, Barakaldo, Spain, June 2018.

33. Invited speaker at "Biogen Encuentro Científico: De la Neuroinflamación a la Neurodegeneración". "Inmunidad Innata (y su relación con la adaptativa)". Leioa, Spain, September 2018.

34. Invited speaker at the 16th ASEICA (Asociación Española de Investigación sobre el Cáncer) International Congress. "Novel approaches for NK cell based cancer immunotherapy". Valencia, Spain, November 2018.

35. Invited speaker at the Workshop: Update on Immunotherapy. "Bases of inmmunotherapy in cancer". Córdoba, Spain, June 2019.

36. Invited speaker at Puerta de Hierro Hospital. "The CD300 molecules: an emerging family of regulators of the Immune System". Madrid, Spain, June 2019.

37. Invited speaker at the Roundtable on Immunosenescence, Seville Royal Academy of Medicine. “The CD300a receptor as biomarker in HIV infection”. Córdoba, Spain, October 2019.

38. Invited speaker at Berripill, Cruces University Hospital. “NK cells and Cancer”. Barakaldo, Spain. November 2019.

39. Invited speaker at Societat Catalana d´Inmunologia. “The CD300 molecules: an emerging family of regulators of the Immune System”. Online. June 2020.

40. Invited Speaker at Alector (South San Francisco, CA). “The CD300 molecules: an emerging family of regulators of the Immune System”. Online. August 2020.

41. Webinar: Diálogos Ikerbasque Elkarrizketak. “Incógnitas y certezas sobre la COVID-19”. September 2020.

42. Invited Speaker at Boehringer Ingelheim Pharma GmbH & Co. KG (Germany). “The CD300 molecules: an emerging family of regulators of the Immune System”. Online. December 2020.

43. Invited speaker at XXI National Symposium of Aerospace Medicine. “Trained Immunity and COVID-19”. Online. December 2020.

44. Invited speaker at the “Seminarios Científicos” of Biocruces Bizkaia Health research Institute. “Immunology and COVID-19”. Online. March 2021.

45. Invited speaker at the “II Congreso Nacional Multidisciplinar COVID-19 de las Sociedades Científicas de España”. “Retos de la investigación con vacunas RNA”. Online. April 2021.

46. Invited speaker at the “Reunión Científica de la Sociedad Vasco-Navarra de Pediatría”. “Respuesta inmune frente al coronavirus”. Online. April 2021.

47. Invited speaker at XXII National Symposium of Aerospatial Medicine. “COVID-19: Respuesta inmune y variantes”. La Gomera. November 2021.

48. Invited speaker at “VII Foro de Inmunología Traslacional e Inmunoterapia del Cáncer - FITCáncer 7”. “Inmunometabolismo de células NK”. Online. November 2021.

49. Invited speaker at “XII Congreso Nacional GeSIDA: Grupo de estudio del SIDA”. “El receptor inhibidor CD300a en la infección por VIH”. Málaga. November 2021.

Awards:

1. Staff Recognition Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD. 2000.

2. Staff Recognition Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD. 2001.

3. Staff Recognition Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD 2002.

4. Staff Recognition Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD 2003.

5. Performance Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD 2004.

6. Performance Award in recognition and appreciation of special achievement. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD 2006.

7. Certificate from The NIH Postbacc IRTA Committee in recognition of outstanding contribution to the education and guidance of postbaccalaureate trainees. Bethesda, MD 2006.

8. Special Act or Service Award in recognition of special achievement in support of the mission of the National Institute of Allergy and Infectious Diseases. National Institutes of Health, National Institute of Allergy and Infectious Diseases. Bethesda, MD 2006.

9. Certificate in recognition of ten years of service in the Government of the United States of America. Bethesda, MD 2010.

10. Award to Venkateswara R. Simhadri from the Fellows Award for Research Excellence (FARE) 2013 competition. FARE 2013 is sponsored by the NIH Scientific Directors, the Office of Intramural Training & Education, the Office of Research on Women's Health, as well as the Fellows Committee. Bethesda, MD 2012.

11. Award to the best oral communication in the Cell Therapy and Tissues Section. SETS (Sociedad Española de Transfusión Sanguínea y Terapia Celular – Spanish

Association of Transfusion and Cell Therapy) Annual Meeting. 2016. Bilbao, Spain, June 2016.

12. Finalist to the best oral communication at the 40th Congress of the Spanish Society of Immunology (Sociedad Española de Inmunología – SEI). Zaragoza, Spain, May 2017.

13. Award from the OSI Ezquerraldea-Enkarterri-Cruces to the Immunopathology Group in recognition of Special Achievement "Eskertze" within the "Excellence in Research". Barakaldo, Spain, May 2018.

14. Muñoz Cariñanos 2020 award from the Spanish Society of Aerospatial Medicine (SEMA) for best presentation at the XXI National Symposium. December, 2020.

15. BioQ Awards: Recognition Visibility of the IIS Biocruces Bizkaia (Reconocimiento Visibilidad del IIS Biocruces Bizkaia) and Recognition Research Groups (Reconocimiento Grupos de Investigación). Biocruces Bizkaia Health Research Institute. May, 2022.

16. Recognition as Favorite Son of the Commonwealth of Subbética (Hijo Predilecto de la Mancomunidad de la Subbética). July, 2022.

Member of Committees:

1. 2002-2005: Member of the NIAID Promotion Advisory Committee.

2. 2009-2013: Member of the Steering Committee of the Cytokine Interest Group (CIG).

3. 2010-2012: Member of the Committee for the Advancement of FDA Science (CAFDAS).

4. 2014-2018: Founder and Member of the Steering Committee of the Immunologia Kluba, a Group of Interest in Immunology at BioCruces Health Research Institute.

5. 2016-2020: Member of the Ethics Committee for Clinical Research of the Basque Country.

6. 2016-2020: Councillor of the Spanish Association of Immunologist Council (vocal de la Junta Directiva de la Sociedad Española de Inmunología).

7. 2017-present: Member of the Research Committee of Biocruces Health Research Institute.

8. 2018-present: Member of the Immunodeficiency Committee of Cruces University Hospital.

Conferences and Meetings: Organization and Chairing.

1. NIH Immunology Retreat 2010. Co-chair of session "Cell Activation/Signaling". Bethesda, MD, September 2010.

2. Chief Scientist's Distinguished Lecture Series. 2011. Chair of the Subcommittee of CAFDAS organizing the Chief Scientist's Distinguished Lecture and Roundtable. Speaker: Janice Reichert, Ph.D. from the Center for the Study of Drug Development, Tufts University. Title: "Current Antibody Therapeutics Development". Silver Spring, MD. September 2011.

3. SEI (Sociedad Española de Inmunología – Spanish Association of Immunologists) Annual Meeting. 2014. Member of the Scientific Committee. Moderator of Session: "Innate Immunity (Inmunidad Innata)". Badajoz, Spain, May 2014.

4. SETS (Sociedad Española de Transfusión Sanguínea y Terapia Celular – Spanish Association of Transfusion and Cell Therapy) Annual Meeting. 2016. Member of the Scientific Committee. Moderator of "Symposium on Cell Therapy II

(Simposio sobre Terapia Celular II)". Bilbao, Spain, June 2016.

5. BIOSPAIN 2016. Biannual meeting. 2016. Organization of "Symposium on Cancer Immunotehrapy". Barakaldo, Spain, September 2016.

6. SEI (Sociedad Española de Inmunología – Spanish Association of Immunologists) Annual Meeting. 2017. Member of the Scientific Committee. Chair of Symposium: "NK cells in antiviral and antitumoral responses and in immunotherapy". Zaragoza, Spain, May 2017.

7. Second Meeting of "NK Cell Day" – 2017. Organizer of the Meeting. Hospital La Paz. Madrid, Spain, June 2017.

8. SEI (Sociedad Española de Inmunología – Spanish Association of Immunologists) Annual Meeting. 2019. Member of the Scientific Committee. Chair of Oral Communications: "Innate Immunity and Inflammation". Chair of Symposium: "Adaptive Immunity". Seville, Spain, May-June 2019.

9. Chairman at the "III Symposium Immunotherapy Cancer 2019". Zaragoza, Spain, November 7th, 2019.

10. A-WISH (Alicante – Winter Immunology Symposium inn Health). 2021. Member of the Scientific Committee. Alicante, Spain, December 16-17, 2021.

Current Member of Associations:

1. Spanish Association of Immunologists (Sociedad Española de Inmunología - SEI).

2. Basque-Navarre Association of Hematology (Sociedad Vasco-Navarra de Hematología y Hemoterapia – ASOVASNA).

3. Spanish Association of Infectious Diseases and Clinical Microbiology (Sociedad Española de enfermedades Infecciosas y Microbiología Clínica).

4. Society for Natural Immunity (SNI).

Editorial Boards:

1. Journal of Immunology, Associate Editor (2004-2006).

2. Journal of Immunology, Section Editor (2006-2010).

3. Frontiers (2011-present):

a. NK and Innate Lymphoid Cell Biology (Frontiers in Immunology): Guest Associate Editor and Review Editor.
b. Cancer immunity and Immunotherapy (Frontiers in Immunology and Frontiers in Oncology): Guest Associate Editor.

Journal Review:

Acta Hematologica, Advanced Science, AIDS Research and Human Retroviruses, Antiviral Research, Biochemistry and Biophysics Reports, Biofactor, Blood, Blood Advances, BMC Pulmonary Medicine, Cancer Immunology and Immunotherapy, Cancer Research Communications, Cancers, Cell Communication and Signalling, Cellular & Molecular Immunology, Clinical Cancer Research, Clinical Infectious Diseases, Clinical and Vaccine Immunology, Cytokine, Cytometry: Part A, eLife, European Journal of Immunology, Expert Opinion on Biological Therapy, Frontiers in Immunology, HLA, Human Immunology, ImmunoHorizons, Immunology, International Immunology, International Journal of Cancer, International Journal of Molecular Sciences, iScience, Journal of Allergy and Clinical Immunology, Journal of Antimicrobial Chemotherapy, Journal of Clinical Investigation, Journal of Clinical Medicine , Journal of Immunology, Journal of Immunology Research, Journal of Infectious Diseases, Journal of Investigative Dermatology, Journal of Leukocyte Biology, Journal of Neuroimmunology, Journal of Translational Medicine, Journal of Virology, JoVE, Laboratory Investigation, Leukemia and Lymphoma, Life Sciences, Mechanisms of Ageing and Development, Molecular Biology of the Cell, Molecular Diagnosis & Therapy, Molecular Immunology, Molecular Oncology, Mucosal Immunology, Oncoimmunology, PLoS One, Saudi Medical Journal, Scandinavian Journal of Rheumatology, Scientific Reports, Stem Cells, Theranostics, Tissue Antigens, Translational Oncology, Trends in Immunology and Viral Immunology.

Grant Reviews:

- Argentina:
  - Fondo para la Investigación Científica y Tecnológica (FONCYT).
- Belgium:
  - Research Foundation-Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO).
- Europe:
  - European Research Council (ERC) – Consolidator Grants.
  - H2020-FETOPEN-2018-2020.
  - HORIZON-EIC-2022-PATHFINDEROPEN.
- France:
  - National Cancer Institute of France.
- Ireland:
  - National Children's Research Centre (NCRC).
- Israel:
  - Israel Science Foundation.

    - United States – Israel Binational Science Foundation (BSF).
- Italy:
    - Fondazione Cariparo.
- Netherlands:
    - Netherlands Asthma Foundation, Netherlands Organization for Scientific Research (NWO, the Dutch Research Council).
    - Reumafonds (Dutch Arthritis Association).
    - WKZ Research Foundation.
- Qatar:
    - Qatar National Research Fund.
- Spain:
    - AECC (Asociación española Contra el Cáncer – Spanish Association Against Cancer).
        - Postdoctoral Fellowships.
        - Predoctoral Fellowships.
        - Proyectos Estratégicos – Strategic Projects.
    - CSIC (Centro Superior de Investigaciones Científicas – Spanish Reserach Council).
    - AEI (Agencia Estatal de Investigación – State Research Agency).
        - Comisionado.
        - Plan Estatal Retos i+d.
    - Fundación CRIS Contra el Cáncer – CRIS Foundation Against Cancer.
    - GILEAD Fellowships.
    - Government of Navarra.
    - ISCIII (Instituto de Salud Carlos III – Carlos III Health Institute).
    - Junta de Andalucía (Andalusian Government).
    - Junta de Extremadura (Extremadura Government).
    - Fundación "Uno entre Cien Mil".
- United Kingdon:
    - Myrovlytis Trust.
- U.S.:
    - Food and Drug Administration (FDA).
        - Chief Scientist Challenge Grants.
        - Critical Path Projects.
        - United States – Israel Binational Science Foundation (BSF).

<u>Other reviews activities</u>:

1. Serra Hunter Program: Immunology Lecturer (2019/D/LEM/CL/1). Autonomous University of Barcelona, Spain. 2019.

2. Tenure Track, Associate Professor. Department of Immunology. Georgetown University, Washington, DC. USA, 2021.

Research Funding (Competitive Grants):

1. Project: **Estudio de los mecanismos de activación en células natural killer (NK).** Funding: CAICYT. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1989-1992.

2. Project: **Estudio de los mecanismos de rechazo en el trasplante hepático.** Funding: FIS. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1990-1992.

3. Project: **Activación de células NK. Bases bioquímicas y su estudio en el envejecimiento.** Funding: FIS. Principal Investigator: Rafael Solana. Participation: Collaborator. 1992-1994.

4. Project: **Patogénesis del SIDA: Análisis de la disfunción de las células NK.** Funding: CAICYT. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1992-1996.

5. Project: **Análisis clonal de activación NK. Función de las moléculas P58, CD43 y CD26.** Funding: FISS. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1995-1997.

6. Project: **Characterization of cell surface molecules important for immune function.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Postdoctoral fellow. 1995-1999.

7. Project: **Recognition of ligands by specific cytotoxic T lymphocytes and natural killer cells.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Postdoctoral fellow. 1995-1999.

8. Project: **Reconocimiento de moléculas de histocompatibilidad por células NK: Análisis de las estructuras implicadas y su papel en la respuesta antitumoral.** Funding: CAICYT. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1996-1999.

9. Project: **Modulación de la actividad citolítica NK mediante moléculas HLA solubles y péptidos sintéticos derivados de moléculas HLA. Análisis funcional y posibles implicaciones terapéuticas.** Funding: FISS. Principal Investigator: José Peña Martínez. Participation: Collaborator. 1998-2000.

10. Project: **Dynamics of CD94/NKG2A Ligand Recognition, Signaling and Trafficking in the Absence and Presence of Activation Receptor Signaling.** Funding: Intramural Program of the National Institute of Allergy and Infectious

Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 1999-2003.

11. Project: **Regulation of Expression of CD94/NKG2 Receptors.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 1999-2003.

12. Project: **Regulation of T Cell Function, Mainly $CD8^+$, by NKG2D.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 1999-2003.

13. Project: **Role of NKG2 Family Receptors in Regulating the Immune Response.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 2003-2007.

14. Project: **Enhancing Immunotherapeutic Value of Lymphocytes by Controlling Apoptosis.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 2003-2007.

15. Project: **Role of LAIR-1 and CD300 Family Receptors in Regulating Inflammation.** Funding: Intramural Program of the National Institute of Allergy and Infectious Diseases, National Institutes of Health. Principal Investigator: John E. Coligan. Participation: Staff Scientist. 2003-2007.

16. Project: **Optimizing human NK cell-mediated antibody cell dependent cytotoxicity (ADCC) assays and elucidating NK factors that may contribute to Cytokine Release Syndrome.** Funding: Intramural Program of the Food and Drug Administration. Principal Investigator: Francisco Borrego. 2009-2013. Amount: 60.000 $ (Plus an IOTF fellow).

17. Project: **The role of the CD300 family of receptors in the innate and adaptive immune system.** Funding: Intramural Program of the Food and Drug Administration. Principal Investigator: Francisco Borrego. 2009-2013. Amount: 160.000 $ (Plus a pre-IRTA and a post-doctoral fellows).

18. Project: **Characterization of the role of natural killer (NK) cells in the protection provided by "universal" influenza vaccines.** Funding: FDA Medical Countermeasures Initiative (MCMi). Principal Investigator: Francisco Borrego. 2011-2013. Amount: 148.000 $ (Plus a pre-IRTA fellow).

19. Project: **Role of macrophages in the protection provided by "universal" influenza vaccines.** Funding: FDA Medical Countermeasures Initiative (MCMi).

Principal Investigator: Francisco Borrego. 2011-2013. Amount: 118.250 $ (Plus a pre-IRTA fellow).

20. Project: **Aplicación de la proteómica, estudios celulares y de citocinas para la identificación de los factores inmunológicos del huésped implicados en el fallo multiorgánico de pacientes con sepsis graves y síndromes hemofagocíticos.** Funding: Basque Government. Reference number: 2012111052. Principal Investigator: Itziar Astigarraga. 2013-2016. Amount: 54.000 €.

21. Project: **Infección por el virus de la inmunodeficiencia humana (VIH): participación de la familia de receptores CD300 en la inflamación crónica y mecanismos de escape viral.** Funding: Instituto de Salud Carlos III, Ministerio de Economía y Competitividad. Reference number: PI13/00889. Principal Investigator: Francisco Borrego. 2014-2016. Amount: 112.227 €.

22. Project: **The CD300 family of receptors in HIV infection.** Funding: Marie Curie, Career Integration Grant, European Commission. Reference number: CIG631674. Principal Investigator: Francisco Borrego. 2014-2017. Amount: 100.000 €.

23. Project: **Papel de la familia de receptores CD300 en el Sistema Inmunológico del neonato.** Funding: SAIOTEK, Basque Government. Reference number: SAIO13-PE13BF005. Principal Investigator: Francisco Borrego. 2013. Amount: 30.000 €.

24. Project: **Estudio comparativo del efecto inmunomodulador de diferentes tipos de células multipotentes (CB-SC, PB-MSC y CB-MSC) sobre los diversos tipos celulares del linaje blanco sanguíneo.** Funding: SAIOTEK, Basque Government. Reference number: SAIO13-PE13BF006. Principal Investigator: Cristina Eguizábal. 2013. Amount: 29.000 €.

25. Project: **Identificación y validación de nuevas dianas terapéuticas en cáncer hematológico.** Funding: Departamento de Salud, Gobierno Vasco. Reference number: 2013111034. Principal Investigator: Francisco Borrego. 2013-2015. Amount: 40.400 €.

26. Project: **Arming human NK cells with chimeric antigen receptors (CARs) for the treatment of refractory pediatric hematological cancer.** Funding: BIOEF (Basque Foundation for Research and Innovation). Reference number: BIO13/CI/009. Principal Investigator: Cristina Eguizabal. 2014-2016. Amount: 33.000 €.

27. Project: **Increasing natural killer (NK) cell effector functions for the treatment of pediatric hematological cancer.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference number:

BIO13/CI/011. Principal Investigator: Francisco Borrego. 2014-2016. Amount: 96.800 €.

28. Project: **Terapia celular basada en el receptor quimérico NKG2D (CAR-NKG2D) para la leucemia infantil.** Funding: Unoentrecienmil Foundation (http://unoentrecienmil.org/). Principal Investigator: Antonio Pérez-Martínez. 2015-2017. Amount: 100.000 €.

29. Project: **Infusión de células natural killer como tratamiento de consolidación en niños adolescentes con leucemia mieloblástica aguda.** Funding: Fundación Mutua Madrileña. Reference number: EUDRACT: 2015-001901-15. Principal Investigator: Antonio Pérez-Martínez. 2015-2017. Amount: 125.000 €.

30. Project: **Implicación de las células NK en el éxito del trasplante de progenitores hematopoyéticos autólogo.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference number: BIO14/TP/003. Principal Investigator: Francisco Borrego. 2015-2017. Amount: 51.084 €.

31. Project: **Production of clinical grade natural killer cells.** Funding: Ayudas para la Movilidad de Profesionales Sanitarios e Investigadores del SNS (M-BAE), Instituto de Salud Carlos III. Reference number: BA15/00060. Principal Investigator: Francisco Borrego. 2015-2016. Amount: 14.000 €.

32. Project: **The CD300a cell surface receptor as a general inhibitor of B cell activation.** Funding: GILEAD Fellowship Program. Reference Number: GLD15/00303. Principal Investigator: Francisco Borrego. 2016-2017. Amount: 44.495 €.

33. Project: **CAR-NKG2D: la llave maestra para el cáncer infantil.** Funding: Asociación española contra el cáncer. Principal Investigator: Antonio Pérez-Martínez. 2016-2018. Amount: 150.000 €.

34. Project: **Regulación del umbral de activación de basófilos y mastocitos por la familia de receptores CD300: Implicación en las alergias a alimentos en niños.** Funding: Instituto de Salud Carlos III, Ministerio de Economía y Competitividad. Reference number: PI16/01223. Principal Investigator: Francisco Borrego. 2017-2021. Amount: 92.565 €.

35. Project: **Modeling human natural killer cell deficiencies in the Petri dish.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2016111140. Principal Investigator: Cristina Eguizabal. 2017-2019. Amount: 87.200 €.

36. Project: **El papel del receptor de membrana CD300a en tumores malignos de células B.** Funding: La Cuadri del Hospi. Reference Number: BC/A/17/010. Principal Investigator: Olatz Zenarruzabeitia. 2017-2019. Amount: €28,000.

37. Project: **Caracterización de los pacientes con leucemia linfoblástica aguda: una aproximación desde la proteómica y la citometría de flujo.** Funding: La Cuadri del Hospi. Reference Number: BC/A/17/009. Principal Investigator: Susana García Obregón. 2017-2020. Amount: 28.000 €.

38. Project: **Histiocitosis: Estudio de nuevas herramientas diagnósticas y dianas terapéuticas.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference Number: BIO16/ER/020/BC. Principal Investigator: Itziar Astigarraga. 2017-2020. Amount. 47.797 €.

39. Project: **Trasplante de precursores hematopoyéticos autólogo en el tratamiento del cáncer: caracterización del papel de las células NK.** Funding: Fundación AECC (Asociación Española Contra el Cáncer). Reference Number: PROYE16074BORR. Principal Investigator: Francisco Borrego. 2017-2020. Amount: 300.000 €.

40. Project: **Trasplante de precursores hematopoyéticos autólogo en el tratamiento del cáncer y enfermedades raras: papel de las células NK.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2017222005. Principal Investigator: Francisco Borrego. 2017. Amount: 43.335 €.

41. Project: **Generación de células NKs que expresan receptores quiméricos de antígenos (CARs) para tratamiento de cáncer pediátrico refractario.** Funding: Fundación Inocente Inocente. Reference number: FII18-003-CPS. Principal Investigator: Cristina Eguizabal. 2018-2019. Amount: 40.000 €.

42. Project: **Organoides tumorales para modelar la eficacia de la inmunoterapia basada en células NK**. Funding: Ayudas para la Movilidad de Profesionales Sanitarios e Investigadores del SNS (M-BAE), Instituto de Salud Carlos III. Reference number: BA18/00040. Principal Investigator: Francisco Borrego. 2018. Amount: 5.340 €.

43. Project: **Papel de las células NK en el trasplante de precursores hematopoyéticos autólogo en el tratamiento de cáncer y enfermedades raras.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2018222038. Principal Investigator: Francisco Borrego. 2018. Amount: 42.681 €.

44. Project: **Análisis de la combinación in vitro de trastuzumab y lirilumab en cáncer de mama. Implicación de los procesos de splicing alternativo.** Funding: SEOM (Sociedad Española de Oncología Médica). Principal Investigator: Cristina Morales. 2019-2020. Amount: 50.000 €.

45. Project: **Papel de las células NK en el trasplante de precursores hematopoyéticos autólogo en el tratamiento de cáncer y enfermedades raras.**

Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2019222027. Principal Investigator: Francisco Borrego. 2019. Amount: 52.181 €.

46. Project: **ONKO-FRAIL: Estratificación de pacientes en oncogeriatría y personalización de intervenciones.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2019111041. Principal Investigator: Laura Basterretxea. 2019-2022. Amount: 409.933 €.

47. Project: **Implicación de la familia de receptores CD300 en enfermedades humanas de base inmunológica**. Funding: Ministry of Science and Innovation. Reference number: PID2019-109583RB-I00. Principal Investigator: Francisco Borrego. 2020-2023. Amount: 254.100 €.

48. Project: **Papel de las células NK humanas en el trasplante de precursores hematopoyéticos autólogo en el tratamiento de cáncer y enfermedades raras.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2020333024. Principal Investigator: Francisco Borrego. 2020. Amount: 87.192 €.

49. Project: **Funciones efectoras de las células NK en pacientes con COVID-19: producción de citoquinas, citotoxicidad natural y dependiente de anticuerpos.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2020111045. Principal Investigator: Francisco Borrego. 2020-2023. Amount: 130.474 €.

50. Project: **Desarrollo de una plataforma de apoyo a la investigación para el cáncer infantil.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference Number: BIO20/CI/015. Principal Investigator: Itziar Astigarraga. 2021-2024. Amount: 242.630,24 €.

51. Project: **NK-Haurrak: Células NK en niños, niñas y adolescents con tumors sólidos. A la búsqueda de biomarcadores que se asocien con el pronóstico de la enfermedad.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference Number: BIO20/CI/009. Principal Investigator: Olatz Zenarruzabeitia. 2021-2024. Amount: 127.133,71 €.

52. Project: **Aplicación de la proteómica y la citometría de flujo en la identificación de nuevos biomarcadores de diagnóstico, monitorización y pronóstico que mejoren el manejo clínico de los niños con leucemias linfobásticas agudas.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference Number: BIO20/CI/003. Principal Investigator: Susana García-Obregón. 2021-2024. Amount: 88.550,00 €.

53. Project: **Aplicación de técnicas de secuenciación masiva y studio de expresión de ligandos reguladores de la inmunidad antitumoral para la mejora del diagnóstico, pronóstico y tratamiento de sarcomas pediátricos.** Funding: BIOEF (Basque Foundation for Research and Innovation)-EiTB Maratoia. Reference Number: BIO20/CI/011. Principal Investigator: Aizpea Echebarria. 2021-2024. Amount: 72.160,00 €.

54. Project: **Papel de las células NK humanas en el trasplante autólogo de precursores hematopoyéticos en el tratamiento de cáncer.** Funding: Department of Health, Basque Government (Departamento de Salud, Gobierno Vasco). Reference number: 2021333006. Principal Investigator: Francisco Borrego. 2021. Amount: 110.182,62 €.

Research Funding (Non-competitive Grants):

1. Project: **Nuevo tratamiento celular contra leucemias agudas mieloides.** Funding: BBK Fundazioa. Reference number: BBK22/3196. Principal Investigator: Francisco Borrego. 2022. Amount: 350.000 €.

Human Resources (Competitive Calls):

A. Predoctoral Fellows:
   - Joana Vitallé Andrade. Department of Education, Linguistic Policy and Culture. Basque Government. January 2016-January 2020.
   - Idoia Mikelez Alonso. CIC biomaGUNE and BioCruces Health Research Institute. November 2016-November 2019.
   - Iñigo Terrén Martínez. BBK-Lanbide Fellowships. May 2017-December 2017.
   - Iñigo Terrén Martínez. Jesús de Gangoiti Barrera Foundation. January 2019-December 2019.
   - Iñigo Terrén Martínez. Department of Education, Linguistic Policy and Culture. Basque Government. January 2019-January 2023.
   - Ane Orrantia Robles. Jesús de Gangoiti Barrera Foundation. January 2020-December 2020.
   - Gabirel Astarloa Pando. BBK-Lanbide Fellowships. July 2020-December 2020.
   - Ane Orrantia Robles. Jesús de Gangoiti Barrera Foundation. January 2021-December 2021.
   - Gabirel Astarloa Pando. AECC (Spanish Association Against Cancer). May 2021-April 2025.
   - Diego Polanco. Prácticas AECC Laboratorio. November 2021-June 2022.
   - Ainhoa Amarilla Irusta. Jesús de Gangoiti Barrera Foundation. January 2022-December 2022.
   - Aritz Tijero. Prácticas AECC Laboratorio. November 2022-June 2023.

- Ainara López Pardo. Inphinit La Caixa. November 2022-October 2025.

B. Postdoctoral Fellows and Research Fellows:
    a. Olatz Zenarruzabeitia Belaustegi. Juan de la Cierva Fellowship. Agencia Estatal de Investigación. January 2018-December 2019.
    b. Olatz Zenarruzabeitia Belaustegi. Sara Borrell Fellowship. Carlos III Health Institute. Ministry of Economics, Industry and Competiveness. January 2018-December 2020.
    c. Sergi Padilla-Parra. Ikerbasque Research Fellow. Basque Government. March 2018-December 2019.
    d. Arrate Sevilla. Margarita Salas Fellowship. Agencia estatal de Investigación. June 2022-May 2023.
    e. Laura Amo. Ikerbasque Research Fellow. Basque Government. January 2023-December 2027.

Clinical Trials:

1. NK cell infusion as consolidation therapy in children and adolescents with acute myeloid leukemia (infusión de células NK como tratamiento de consolidación en niños y adolescentes con leucemia mieloblástica aguda).
   Sponsor: Antonio Pérez-Martínez, La Paz University Hospital, Madrid, Spain. Non comercial, multicentric clinical trial. Funding: Competitive grant from Fundación Mutua Madrileña.
   Dates: 2015-2018.
   Principal Investigators: Antonio Pérez-Martínez (La Paz University Hospital, Madrid) – Itziar Astigarraga (Cruces University Hospital).
   Collaborator: Francisco Borrego.

2. Phase I/II clinical trial, multicentric, open, of infusion of activated NK cells for the treatment of children and young adults with sarcoma (Ensayo Clínico Fase I/II, multicéntrico, abierto, de infusión de células NK activadas para el tratamiento de niños, adolescentes y adultos jóvenes con sarcomas). SANKOMA_2016.
   Promotor: Antonio Pérez-Martínez, La Paz University Hospital, Madrid, Spain. Non comercial, multicentric clinical trial.
   Dates: 2017-2019.
   Principal Investigators: Antonio Pérez-Martínez (La Paz University Hospital, Madrid) – Itziar Astigarraga (Cruces University Hospital).
   Collaborator: Francisco Borrego.

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Total: **Times cited:** 6676. **h-index:** 42. **i10-index:** 80.
Since 2016: **Times cited:** 2544. **h-index:** 30. **i10-index:** 60.
Source: Google Scholar
https://scholar.google.com/citations?hl=en&user=vtsOR60AAAAJ&view_op=list_works&sortby=pubdate

I. Original Research Articles

1. **F. Borrego,** J. Peña, and R. Solana. 1993. Regulation of CD69 expression on human natural killer cells: differential involvement of protein kinase C and protein tyrosine kinases. *Eur J Immunol 23:1039-1043.*

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3. J. M. Quesada, I. Serrano, **F. Borrego,** A. Martin, J. Peña, and R. Solana. 1995. Calcitriol effect on natural killer cells from haemodyalized and normal subjects. *Calcif Tissue Int 55:113-117.*

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7. **F. Borrego,** M. Ulbrecht, E.H. Weiss, J.E. Coligan, and A.G. Brooks. 1998. Recognition of human histocompatibility leukocyte antigen (HLA)-E complexed with HLA class I signal sequence-derived peptides by CD94/NKG2 confers protection from natural killer cell-mediated lysis. *J Exp Med 187:813-818.*

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Zenarruzabeitia, and **F. Borrego.** 2022. Expansion of a phenotypically different activated CD9+ NK cell subset early after autologous hematopoietic stem cell transplantation in children with solid tumors. *(Manuscript in preparation).*

II. Review Articles

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III. Letters to the Editors/Editorials/ Dissemination Scientific Articles

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8. **F. Borrego** and I. Terrén. 2020. Chapter 8: Células linfoides innatas: papel en la inmunidad y en las enfermedades inmunomediadas. In: Inmunología para reumatólogos. Una visión integradora. Eds: Javier Rodríguez-Carrio, Mercedes Alperi-López y Francisco J. Ballina García. Springer Healthcare Ibérica S.L. ISBN: 978-84-09-19953-2.

VI. Oral Presentations in Meetings

1. Oral Presentation in a Workshop at Keystone Meeting C3: Molecular and Cellular Biology of Leukocyte Regulatory Receptors, March 17 - 22, 2002. Tahoe City, CA.

2. Oral Presentation in a Workshop at the 55th Harden Conference: The dynamics of membrane traffic, August 25-30, 2002. England, UK.

3. Oral Presentation in a Workshop at the 19th International Natural Killer Cell Workshop and 7th Annual Meeting of the Society for Natural Immunity, October 6-8, 2002. San Juan, Puerto Rico.

4. Oral Presentation in a Workshop at the 20th International Natural Killer Cell Workshop and 8th Annual Meeting of the Society for Natural Immunity, April 24-28, 2004. Noordwijkerhout, The Netherlands.

5. Oral Presentation in a Workshop at Experimental Biology 2005 (The American Association of Immunologists 2005 Meeting), April 2-6, 2005. San Diego, CA. Title: "NKG2D co-stimulation of human naïve CD8+ T cells".

6. Oral Presentation in a Session at the Immunology Interest Group, Retreat, NIH, September 19-21, 2005, Airlie, VA. Title: "Human NKG2 receptors: signaling and regulation of expression".

7. Oral Presentation in a Session at the Gordon Conference "Collagens". July 22-27, 2007, New London, NH. Title: "Characterization of the interaction between LAIR-1 and collagens".

8. Oral Presentation by Venkateswara R. Simhadri in the Inflammation and Innate Immunity Session at the Immunology Interest Group, Retreat, NIH, September 12-14, 2011, Cambridge, MD. Title: "CD300a binds to phosphatidylserine and phosphatidylethanolamine and inhibits the uptake of apoptotic cells by macrophages."

9. Oral Presentation in the Annual Meeting of the Spanish Association of Blood Transfusion and Cell Therapy. Bilbao, Spain, June 2016. Title: "Células NK preactivadas con citoquinas: bases moleculares y uso potencial en inmunoterapia celular adoptiva".

10. Oral Presentation by Joana Vitallé at the XL Annual Meeting of Spanish Association of Immunology. May 25-27, 2017. Zaragoza, Spain. Title: "Monocytes phenotype and cytokine production in HIV-1 infected patients receiving a modified vaccinia Ankara-based HIV-1 vaccine (MVA-B): relationship to CD300 molecules expression".

11. Oral Presentation by Olatz Zenarruzabeitia Belaustegi Vitallé at the XL Annual Meeting of Spanish Association of Immunology. May 25-27, 2017. Zaragoza, Spain. Title: "CD300c is a co-stimulatory receptor in IgE/FcεRI-dependent human basophil activation".

12. Oral Presentation by José M. Cárdenas at the XXVIII Annual Meeting of the Spanish Association of Blood Transfusion and Cell Therapy- 2nd Spanish-Portuguese Congress of Transfusion Medicine and Cell Therapy. June 1-3, 2017. Porto, Portugal. Title: "Obtención de progenitores hematopoyéticos CD34+ y células NK a partir de célula madre pluripotentes inducidas (iPSCs)".

13. Oral Presentation by Lara Herrera at XV Congreso de la Asociación Española de Bancos de Tejidos. June 8-10. Bilbao, Spain. Title: "Las células soporte OP9 son superiores para la generación in vitro de células natural killer maduras y funcionales a partir de progenitores hematopoyéticos de cordón umbilical".

14. Oral Presentation by Olatz Zenarruzabeitia at 5th European Congress of Immunology. September 2-5, 2018. Amsterdam, Netherlands. Title: "CD300c receptor co-stimulates IgE-mediated basophils activation and its expression is increased in cow´s milk allergic children".

15. Oral Presentation by Cristina Eguizabal at International Conference on Lymphocyte engineering. September 13-15. Madrid, Spain. 2018. Title: "NK cells from different sources as a promising alternative for CAR-based immunotherapy against hematological cancers".

16. Oral Presentation by Joana Vitallé at the X Congreso Nacional de GESIDA 2018. November 6-9. Madrid, Spain. 2018. Title: "Higher susceptibility of CD4+RA- T lymphocytes expressing CD300a to HIV-1 infection".

17. Oral Presentation by Joana Vitallé at MikrobioGUNE-1st Basque Meeting of Microbiology. December 11. Bilbao, Spain. 2018. Title: "Higher susceptibility of CD4+RA- T lymphocytes expressing CD300a to HIV-1 infection".

18. Oral Presentation by Iñigo Terrén at VII Jornadas Doctorales G-9. April 10-12. Logroño, Spain. 2019. Title: "Inmunoterapia contra el cancer: potenciando células natural killer".

19. Oral Presentation by Iñigo Terrén at 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1, 2019. Seville, Spain. Title: "Metabolic reprogramming of human cytokine-induced memory-like NK cells".

20. Oral Presentation by Joana Vitallé at 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1, 2019. Seville, Spain. Title: "CD300a receptor promotes HIV infection of host cells".

21. Oral Presentation by Olatz Zenarruzabeitia at 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1, 2019. Seville, Spain. Title: "Increased expression levels of CD300c on basophils from allergic individuals".

22. Oral Presentation by Joana Vitallé at the XI Congreso Nacional de GESIDA 2019. December 10-13, Toledo, Spain. 2019. Title: "CD300a inhibits CD16-mediated NK cell effector functions in HIV-1-infected patients".

23. Oral Presentation by Ane Orrantia at the XXVII Congreso Anual de ASOVASNA (Asociación Vasco Navarra de Hematología). Online Meeting. May 12-13, Donostia-San Sebastián, Spain, 2021. Title: "El grado de maduración de las células NK tras el trasplante autólogo de precursores hematopoyéticos se asocia con la progresión de la enfermedad en pacientes con mieloma múltiple".

24. Oral Presentation by Olatz Zenarruzabeitia at the 6th European Congress of Immunology. September 1-4, 2021. Online. Europe. Title: "PD-1 expressing regulatory T cells and basophils with an activating profile in infants with moderate-to-severe Atopic Dermatitis hypersensitized to food antigens".

25. Oral Presentation by Gabirel Astarloa-Pando at the 43 Annual Meeting of Spanish Association of Immunology. September 22-24, 2022. León, Spain. Title: "NK cell transcriptome and phenotypical changes after autologous HSCT: transient expansion of a CD9+ decidual-like NK cell subset".

VII. <u>Published Abstracts</u>

1. MartinMalo, A, M.C. Alonso, **F. Borrego,** D. Castillo, M.A. AlvarezLara, M. Espinosa, J. Pena, and P. Aljama. 1994. Effectos of different biocompatible membranes on granulocyte surface receptors. *Kideny Int. 46:575-576.*

2. Ramirez, R., J. Carracedo, **F. Borrego,** J. Pena, and R. Solana. 1996. Activation of NK cells by TSST1 superantigen. *Hum Immunol 47:P383-P383.*

3. **Borrego, F.,** F. Zappacosta, A.G. Brooks, K.C. Parker, and J.E. Coligan. 1997. Identification of endogenous peptides complexed to HLA-Cw*0304: Functional relevance to NK cell recognition. *J Allergy Clin Immun 99:1884-1884. Part 2 Suppl.*

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5. Solana, R., **F. Borrego,** B. Ostos, R. Ramirez, J. Carracedo, and C. Alonso. 1998. Senescence and natural killer (NK) cell phenotype and function. *Brit J Cancer 78:P126 Suppl. 1.*

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7. Coligan, J., **F. Borrego,** J. Kabat, and A. Brooks. 1999. Structural features controlling the interaction of the NK cell CD94/NKG2A receptor with HLA-E. *FASEB J 13: A307-A307 Part 1 Suppl. S.*

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12. Maasho, K., **F. Borrego,** L. Lieto, and J.E. Coligan. 2002. Defining the regulatory factors required for CD94 gene expression. *FASEB J 16:A694-A694 Part 1.*

13. **Borrego, F.,** J. Kabat, T. Sanni, and J.E. Coligan. 2002. CD94/NKG2A recycling and transmission of the inhibitory signal are independent processes. *FASEB J 16: A320-A320 Part 1.*

14. Coligan, J.E., **F. Borrego,** A. Brooks, and J. Kabat. 2002. Role that each CD94/NKG2A ITIM motif plays in inhibition of activation signals. *FASEB J 16:A313-A313 Part 1.*

15. **Borrego, F.,** T.B. Sanni, and J.E. Coligan. 2003. Lateral mobility of CD94/NKG2A receptors on the cell surface. *FASEB J 17:C317-C317 Suppl. S.*

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24. Burgess, S.J., **F. Borrego,** and J.E. Coligan. 2005. Ligation of the NK cell inhibitory receptor CD94/NKG2A induces tyrosine phosphorylation of c-Cbl and Cbl-b and mediates the ubiquitination of ZAP-70 in NK cells. *FASEB J 19:A391-A391 Part 1 Supl. S.*

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27. Burgess, S.J., A. I. Marusina, **F. Borrego,** and J.E. Coligan. 2006. IL-21 down-regulates expression and function in human NK cells and differentially regulates NKG2D and CD28 expression on CD8+ T cells. *J Immunol 176:S27-S27 Suppl. S.*

28. **Borrego, F.,** S. Narayanan, X. Tang, Y. Alvarez, and J.E. Coligan. 2008. The immunomodulatory CD300A receptor is differentially expressed on human TH1 and TH17 cells. *Cytokine 43:272.*

29. Narayanan, S., **F. Borrego,** and J.E. Coligan. 2009. Role of TOSO in activation induced cell death of human T and NK cells. *J Immunol 182:82.2.*

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36. S. García-Obregón, I. Seijas, F.J. Pilar-Orive, C. Ruano, A. Peña, O. Zenarruzabeitia, J. Vitallé, **F. Borrego,** I. Ortega-Martínez, M.D. Boyano, J. Gil, and I. Astigarraga. 2016. High levels of sCD25 and sCD163 in patients diagnosed with sepsis. Could they be useful for sepsis diagnosis and differential diagnosis with hemophagocytic lymphohistiocytosis (HLH)? *Pediatr. Blood Cancer S42.*

37. L. Herrera, A. Boronat, P. Zuñiga, I. Martin, J. Anguita, B. Marzal, S. Santos, M.A. Vesga, **F. Borrego**, M. Juan and C. Eguizabal. 2019. NK cells from different sources as a promising alternative for CAR-based immunotherapy against hematological cancers. *Human Gene Therapy 29(11), A2-A2. https://doi.org/10.1089/hum.2018.29071.abstracts.*

38. I. Astigarraga, S. García-Obregón, P. Alba-Pavón, I. Seijas, J. Pilar-Orive, **F. Borrego** and J. Gil-Herrera. 2019. The role in diagnosis of high serum levels of sCD25 and sCD163 in patients with severe sepsis and hemophagocytic lymphohistiocytosis (HLH). *Pediatr. Blood Cancer 66, S42.*

39. J. Vitallé, I. Carlon-Andres, O. Zenarruzabeitia, S. Padilla-Parra and **F. Borrego**. 2019. CD300a receptor promotes HIV-cell fusion through the interaction with phosphatidylserine and phosphatidylethanolamine. *European Biophysics Journal with Biophysics Letters 48, S248-S248.*

40. O. Zenarruzabeitia, J. Vitallé, I. Terrén, A. Orrantia, A. Bilbao, I. Jauregui, M.D. Martínez, P.M. Gamboa and **F. Borrego**. 2020. Immunological changes, including CD300 molecules expression, during allergen desensitization immunotherapy. *Allergy 75, 126-126.*

41. C.L. Pranger, J.F. Singer, V.K. Köhler, I. Pali-Schöll, A. Fiocchi, O. Zenarruzabeitia, **F. Borrego**, K.M. Ilieva, S.N. Karagiannis and E. Jensen-Jarolim. 2020. PIPE-cloned human IgG4 antibodies inhibit activation of human basophils sensitized with IgE antibodies specific for the major milk allergen beta-lactoglobulin in basophil activation tests (BAT). *Allergy 75, 242-243.*

42. C.L. Pranger, J.F. Singer, V.K. Koehler, I. Pali-Schoell, A. Fiocchi, S.N. Karagiannis, O. Zenarruzabeitia, **F. Borrego** and E. Jensen-Jarolim. 2021. New tools in basophil activation tests (BAT): PIPE-cloned human IgE, IgG1, and IgG4 antibodies specific for the major milk allergen beta-lactoglobulin (BLG). *Allergologie 44, 157-158.*

43. A. Orrantia, I. Terrén, G. Astarloa-Pando, C. González, A. Uranga, J.J. Mateos, J.C. García-Ruiz, M. Riñón, M. Rey, S. Pérez-Fernández, O. Zenarruzabeitia and **F. Borrego**. 2021. High frequency of mature CD57+NKG2A- NK cells associate with poor disease progression after autologous hematopoietic stem cell transplantation in multiple myeloma patients. *Eur J Immunol 51, 271-271*.

44. G. Astarloa-Pando, O. Zenarruzabeitia, I. Terrén, A. Orrantia, R. Pérez-Garay, I. Seijas-Betolaza, J. Nieto-Arana, N. Imaz-Ayo, S. Pérez-Fernández, E. Arana-Arri and **F. Borrego**. 2021. T cell activation, highly armed cytotoxic cells and a shift in monocytes CD300 receptors expression in severe COVID-19. *Eur J Immunol 51, 267-267*.

45. I. Terrén, A. Orrantia, A. Mosteiro, J. Vitallé, G. Astarloa-Pando, O. Zenarruzabeitia and **F. Borrego**. 2021. Metabolic changes of cytokine-induced memory-like human NK cells and glycolytic-dependence of their effector functions. *Eur J Immunol 51, 143-143*.

46. O. Zenarruzabeitia, A. Bilbao, R. Pérez-Garay, A. Irurzun, I. Terrén, A. Orrantia, G. Astarloa-Pando and **F. Borrego**. 2021. PD-1 expressing regulatory T cells and basophils with an activating profile in infants with moderate-to-severe atopic dermatitis hypersensitized to food antigens. *Eur J Immunol 51, 76-76*.

VIII. <u>Other Abstracts and Communications</u>

1. R.L. DeBiasi, A. Weinberg, M. Levin, V.R. Simhadri, J.L. Mariano, **F. Borrego,** and S. Rosenzweig. 2013. Novel natural killer cell defect in an adolescent with disseminated zoster. 2013 PAS (Pediatric Academic Societies) Annual Meeting. Washington, DC, USA.

2. V.R. Simhadri, M. Dimitrova, J.L. Mariano, Q. Zhou, W. Zhong, K. Hancock, T. Ozawa, A. Muraguchi, H. Kishi, and **F. Borrego.** 2013. Human anti-M2 antibodies induce NK cell mediated antibody-dependent cell-mediated cytotoxicity (ADCC) and cytokine secretion against M2 expressing cells. FDA MCMi Regulatory Science Symposium. Silver Spring, MD, USA.

3. J. Monge, M.Á. Pérez, C. Eguizabal, **F. Borrego,** O. Zenarruzabeitia, M.N. Azkarate, S. Santos, E. Urrechaga, A. Renovales, J.M. Cárdenas, and M.Á. Vesga. 2014. Filtración defectuosa de concentrados de hematíes por hemoglobinopatía en los donantes. XXV Congreso de la Sociedad Española de Transfusión Sanguínea. June 19-21, 2014. Oviedo, Spain.

4. M. Dimitrova, O. Zenarruzabeitia, **F. Borrego,** and V.R. Simhadri. 2015. CD300c is uniquely expressed on $CD56^{bright}$ Natural Killer Cells and its function alters from CD300a upon ligand recognition. NK2015: 15^{th} Meeting of the Society for Natural Immunity. May 2-6, 2015. Montebello, Quebec, Canada.

5. I. Odriozola, O. Zenarruzabeitia, J. Vitallé, L. Herrera, J.M. Salcedo, C. Eguizabal, M.A. Vesga, and **F. Borrego**. 2015. Células NK "memoria-like" inducidas por citoquinas: bases moleculares y uso potencial en inmunoterapia celular adoptiva. XXII reunión anual ASOVASNA. May 16, 2015. Vitoria-Gasteiz, Spain.

6. L. Herrera, J.M. Salcedo, O. Zenarruzabeitia, J. Vitallé, I. Odriozola, **F. Borrego**, M.A. Vesga, and C. Eguizabal. 2015. Producción de CAR-NK de grado preclínico y determinación de la mejor fuente celular para la generación de CAR-NK. XXII reunión anual ASOVASNA. May 16, 2015. Vitoria-Gasteiz, Spain.

7. O. Zenarruzabeitia, J. Vitallé, S. García-Obregón, I. Astigarraga, C. Eguizabal, S. Santos, V.R. Simhadri, **F. Borrego**. 2016. The expression and function of human CD300 receptors on circulating mononuclear cells are distinct in newborns and adults. XXXIX Annual Meeting of Spanish Association of Immunology. May 5-7, 2016. Alicante, Spain.

8. **F. Borrego**, O. Zenarruzabeitia, J. Vitallé, A. Gredilla, J. González, J.M. Salcedo, L. Herrera, C. Eguizabal, and M.A. Vesga. 2016. Células NK preactivadas con citoquinas: bases moleculares y uso potencial en inmunoterapia celular adoptiva. XXVII Annual Meeting of the Spanish Association of Blood Transfusion and Cell Therapy. June 23-25, 2016. Bilbao, Spain.

9. C. Eguizabal, L. Herrera, J.M. Salcedo, O. Zenarruzabeitia, J. Vitallé, **F. Borrego**, S. Santos, and M.A. Vesga. 2016. Producción de CAR-NK de grado preclínico a partir de progenitores hematopoyéticos de sangre de cordón umbilical. XXVII Annual Meeting of the Spanish Association of Blood Transfusion and Cell Therapy. June 23-25, 2016. Bilbao, Spain.

10. L. Herrera, J.M. Salcedo, O. Zenarruzabeitia, J. Vitallé, **F. Borrego**, S. Santos, M.A. Vesga, and C. Eguizabal. 2016. Preclinical grade production of CAR-NK from umbilical cord blood hematopoietic progenitors. II Seville Molecular Medicine Workshop: Cell therapy, molecular mechanisms and clinical translation. May 9-10. Seville, Spain.

11. S. García-Obregón, I. Seijas, F.J. Pilar-Orive, C. Ruano, A. Peña, O. Zenarruzabeitia, J. Vitallé, **F. Borrego**, I. Ortega-Martínez, M.D. Boyano, J. Gil, and I. Astigarraga. 2016. High levels of sCD25 and sCD163 in patients diagnosed with sepsis. Could they be useful for sepsis diagnosis and differential diagnosis with hemophagocytic lymphohistiocytosis (HLH)? 32nd Annual Meeting of the Histiocyte Society. October 17-19. Dublin, Ireland.

12. J. Vitallé Andrade, O. Zenarruzabeitia Belaustegi, I. Terrén Martínez, M. Plana Prades, A. Crespo Guardo, L. Leal Alexander, J. Peña Martínez, F. García Alcaide, and **F. Borrego Rabasco**. 2017. Monocytes phenotype and cytokine production in HIV-1 infected patients receiving a modified vaccinia Ankara-based HIV-1 vaccine (MVA-B): relationship to CD300 molecules expression. XL Annual Meeting of Spanish Association of Immunology. May 25-27, 2017. Zaragoza, Spain.

13. L. Herrera, J.M. Salcedo, **F. Borrego**, S. Santos, M.A. Vesga, and C. Eguizabal. 2017. OP9 feeder cells are superior for the generation of mature and functional NK cells from umbilical cord hematopoietic progenitors. XL Annual Meeting of Spanish Association of Immunology. May 25-27, 2017. Zaragoza, Spain.

14. O. Zenarruzabeitia Belaustegi, J. Vitallé Andrade, L. Dopazo Fernández, A. Bilbao Aburto, C. Tutau Gómez, I. Astigarraga Aguirre, and **F. Borrego Rabasco**. CD300c is a co-stimulatory receptor in IgE/FcεRI-dependent human basophil activation. XL Annual Meeting of Spanish Association of Immunology. May 25-27, 2017. Zaragoza, Spain.

15. L. Herrera, J.M. Salcedo, **F. Borrego**, S. Santos, C. Rodríguez, J.M. Cárdenas, M.A. Vesga, and C. Eguizabal. 2017. Obtención de progenitores hematopoyéticos CD34+ y células NK a partir de célula madre pluripotentes inducidas (iPSCs). XXVIII Annual Meeting of the Spanish Association of Blood Transfusion and Cell Therapy- 2nd Spanish-Portuguese Congress of Transfusion Medicine and Cell Therapy. June 1-3, 2017. Porto, Portugal.

16. L. Herrera, J.M. Salcedo, **F. Borrego,** C. Rodríguez, S. Santos, M.A. Vesga, and C. Eguizabal. Las células soporte OP9 son superiores para la generación in vitro de células natural killer maduras y funcionales a partir de progenitores hematopoyéticos de cordón umbilical. XV Congreso de la Asociación Española de Bancos de Tejidos. June 8-10. Bilbao, Spain.

17. I. Terrén, J. González, A. Gredilla, I. Odriozola, I. Mikelez, J. Vitallé, O. Zenarruzabeitia, and **F. Borrego**. Efecto del Ruxolitinib en la generación de células NK "memoria-like" inducidas por citoquinas (CIML). XXIV reunión anual ASOVASNA. May 20, 2017. Bilbao, Spain.

18. I. Mikelez-Alonso, A. Ruiz de Angulo, **F. Borrego,** J.C. Mareque. Exploitation of immune cell iron oxide nanoparticle interaction for cancer immunotherapy. International conference on nanomedicine and nanobiotechnology – ICONAN 2017. September 25-27. Barcelona, Spain.

19. J. Vitallé, I. Terrén, M. Plana, A. Crespo, L. Leal, J. Peña, F. García, O. Zenarruzabeitia and F. Borrego. 2017. Monocytes phenotype and cytokine production in HIV-1 infected patients receiving a modified vaccinia Ankara-based HIV-1 vaccine (MVA-B): relationship to CD300 molecules expression. IX Congreso Nacional de GESIDA 2017. November 28-December 1. Vigo, Spain.

20. J. Vitallé, I. Terrén, L. Tarancón, M. Genebat, E. Ruiz-Mateos, M. Leal, O. Zenarruzabeitia and F. Borrego. HIV-1 infection modulates CD300a inhibitory receptor expression on CD4+ T lymphocytes. IX Congreso Nacional de GESIDA 2017. November 28-December 1. Vigo, Spain.

21. J. Vitallé, I. Terrén, L. Tarancón, M. Genebat, E. Ruiz-Mateos, M. Leal, O. Zenarruzabeitia and F. Borrego. CD300a inhibitory receptor expression is related to the exhaustion phenotype and functional capabilities of CD8+ T cells in HIV-1 infection. IX Congreso Nacional de GESIDA 2017. November 28-December 1. Vigo, Spain.

22. L. Herrera, A. Boronat, P. Zuñiga, I. Martin, J. Anguita, B. Marzal, S. Santos, M.A. Vesga, **F. Borrego**, M. Juan and C. Eguizabal. 2018. NK cells from different sources as a promising alternative for CAR-based immunotherapy against hematological cancers. 9th Biennial Congress of the Sociedad Española de Terapia Génica y Celular. March 14-16. Palma de Mallorca, Spain.

23. L. Herrera, A. Boronat, P. Zuñiga, I. Martin, J. Anguita, B. Marzal, S. Santos, J. Monge, M.A. Vesga, **F. Borrego**, M. Juan and C. Eguizabal. 2018. Células CAR-NK de diferentes fuentes celulares como alternativa prometedora para inmunoterapia contra cánceres hematológicos. 29 Congreso de la Sociedad Española de Transfusión Sanguínea y Terapia Celular. June 14-16. Valencia, Spain.

24. I. Terrén, I. Mikelez, I. Odriozola, A. Gredilla, J. González, A. Orrantia, J. Vitallé, O. Zenarruzabeitia and **F. Borrego**. 2018. Role of interleukin (IL)-12/15/18 and ruxolitinib in the phenotype, proliferation and polyfunctionality of human cytokine-preactivated NK cells. 5th European Congress of Immunology. September 2-5. Amsterdam, Netherlands.

25. J. Vitallé, I. Terrén, L. Gamboa, A. Orrantia, L. Tarancón-Díez, M. Genebat, E. Ruiz-Mateos, M. Leal, S. García-Obregón, O. Zenarruzabeitia and **F. Borrego**. 2018. CD300a expression on T lymphocytes from naïve HIV-1 infected patients for cART is associated to good prognosis and a higher polufunctional HIV-specific CD8+ T cell response. 5th European Congress of Immunology. September 2-5. Amsterdam, Netherlands.

26. O. Zenarruzabeitia, J. Vitallé, I. Terrén, A. Orrantia, I. Astigarraga, L. Dopazo, C. González, C. Tutau, L. Santos-Díez, P. Gamboa, A. Bilbao and F. Borrego. 2018. CD300c receptor co-stimulates IgE-mediated basophils activation and its expression is increased in cow´s milk allergic children. 5th European Congress of Immunology. September 2-5. Amsterdam, Netherlands.

27. L. Herrera, A. Boronat, P. Zuñiga, I. Martin, J. Anguita, B. Marzal, S. Santos, M.A. Vesga, **F. Borrego**, M. Juan and C. Eguizabal. 2018. NK cells from different sources as a promising alternative for CAR-based immunotherapy against hematological cancers. International Conference on Lymphocyte engineering. September 13-15. Madrid, Spain.

28. I. Astigarraga, S. García-Obregón, P. Alba-Pavón, I. Seijas, J. Pilar-Orive, **F. Borrego** and J. Gil-Herrera. 2018. The role in diagnosis of high serum levels of sCD25 and sCD163 in patients with severe sepsis and hemophagocytic lymphohistiocytosis (HLA). 34th Annual Meeting of the Histiocyte Society. October 22-23. Lisbon, Portugal.

29. A. Orrantia, I. Terrén, J. Vitallé, I. Astigarraga, J.C. García, M. Riñón, C. González, M. Rey, J.J. Úriz, T. Carrascosa, O. Zenarruzabeitia and **F. Borrego**. 2018. Reconstitución del pool de células NK tras el trasplante de precursores hematopoyético autólogo en pacientes con mieloma múltiple. XXV Congreso anual ASOVASNA. October 27. Pamplona, Spain.

30. I. Terrén, A. Orrantia, J. Vitallé, O. Zenarruzabeitia and **F. Borrego**. 2018. Caracterización metabólica de células NK estimuladas con IL-12, IL-15 e IL-18. XXV Congreso anual ASOVASNA. October 27. Pamplona, Spain.

31. J. Vitallé, L. Tarancón-Díez, R. Jiménez, O. Zenarruzabeitia, L. López-Cortés, E. Ruiz-Mateos and **F. Borrego**. 2018. Higher susceptibility of CD4+RA- T lymphocytes expressing CD300a to HIV-1 infection. X Congreso Nacional de GESIDA 2018. November 6-9. Madrid, Spain.

32. I. Mikelez-Alonso, **F. Borrego** and A.L. Cortajarena. 2018. IL15 vehiculized Iron Oxide nanoparticles as a tool to enhance NK cell mediated-activity. NanoBio&Med 2018. November 20-22. Barcelona, Spain.

33. A. Orrantia, I. Terrén, J. Vitallé, J.C. García-Ruiz, J.J. Mateos, C. González, T. Carrascosa, O. Zenarruzabeitia and **F. Borrego**. 2019. Phenotypic and functional

characterization of NK cells after autologous hematopoietic stem cells transplantation in multiple myeloma. 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1. Seville, Spain.

34. I. Terrén, A. Orrantia, J. Vitallé, O. Zenarruzabeitia and **F. Borrego**. 2019. Metabolic reprogramming of human cytokine-induced memory-like NK cells. 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1. Seville, Spain.

35. J. Vitallé, I. Carlón-Andrés, L. Tarancón-Díez, R. Jiménez, O. Zenarruzabeitia, C. Roca, L. López-Cortés, E. Ruiz-Mateos, S. Padilla-Parra and **F. Borrego**. 2019. CD300a receptor promotes HIV infection of host cells. 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1. Seville, Spain.

36. J. Vitallé, A. Orrantia, I. Terrén, A. Delgado, J. del Romero, A. Silva, M.D. Martín, O. Zenarruzabeitia, **F. Borrego** and Cohort of the Spanish HIV Research Network (CoRIS). 2019. CD300a reduces NK cells effector functions in HIV-1 infected patients. 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1. Seville, Spain.

37. O. Zenarruzabeitia, J. Vitallé, I. Terrén, A. Orrantia, A. Bilbao, L. Dopazo, A. Segurola, Y. Seras, P.M. Gamboa and **F. Borrego**. 2019. Increased expression levels of CD300c on basophils from allergic individuals. 41 Annual Meeting of Spanish Association of Immunology. May 30-June 1. Seville, Spain.

38. I. Mikelez-Alonso, **F. Borrego** and A.L. Cortajarena. 2019. Enhanced NK cell activity by IL15 functionalized Iron Oxide nanoparticles. Nanomed Europe 2019. June 17-19. Braga, Portugal.

39. J. Vitallé, I. Carlon-Andres, O. Zenarruzabeitia, S. Padilla-Parra and **F. Borrego**. 2019. CD300a receptor promotes HIV-cell fusion through the interaction with phosphatidylserine and phosphatidylethanolamine. ProLiN (Protein Lipid Nanostructures: from domains to devices) 2019. July 25-27. Bilbao, Spain.

40. D. González-Lamuño, O. Villate, F. Andrade, L. Ceberio, N. López-Osle, I. Irastorza, I. Terrén, **F. Borrego** and L. Aldamiz-Echevarria. 2019. Impaired mitocondrial function in methylmalonic acidemia. Annual Symposium of the SSIEM (Society for the Study of Inborn Errors of metabolism). September 3-6. Rotterdam, the Netherlands.

41. A. Orrantia, I. Terrén, J. Vitallé, J.C. García-Ruiz, J.J. Mateos, M. Riñón, C. González, M. Rey, T. Carrascosa, O. Zenarruzabeitia and **F. Borrego**. 2019. Gradual acquisition of NK cells mature phenotype after autologous hematopoietic stem cell transplantation in multiple myeloma. The 18th Meeting of the Society for Natural Immunity. September 30-October 3. Luxembourg, Luxembourg.

42. I. Terrén, A. Orrantia, J. Vitallé, O. Zenarruzabeitia, and **F. Borrego**. 2019. Metabolic reprogramming of human IL-12/15/18-preactivated NK cells. The 18th Meeting of the Society for Natural Immunity. September 30-October 3. Luxembourg, Luxembourg.

43. J. Vitallé, A. Orrantia, I. Terrén, A. Delgado, J. del Romero, A. Silva, M.D. Martín, D. Dalmau, O. Zenarruzabeitia, and **F. Borrego**, on behalf of CoRIS and the HIV Biobank. 2019. CD300a reduces NK cell degranulation and cytokine production in HIV-1 infected patients. The 18th Meeting of the Society for Natural Immunity. September 30-October 3. Luxembourg, Luxembourg.

44. A. Orrantia, I. Terrén, J. Vitallé, J.C. García-Ruiz, J.J. Mateos, M. Riñón, C. González, M. Rey, T. Carrascosa, O. Zenarruzabeitia and **F. Borrego**. 2019. Gradual acquisition of NK cells mature phenotype after autologous hematopoietic stem cell transplantation in multiple myeloma. III Symposium Immunotherapy Cancer. November 7, 2019. Zaragoza, Spain.

45. I. Terrén, A. Orrantia, J. Vitallé, O. Zenarruzabeitia, and **F. Borrego**. 2019. Metabolic reprogramming of human IL-12/15/18-preactivated NK cells. III Symposium Immunotherapy Cancer. November 7, 2019. Zaragoza, Spain.

46. J. Vitallé, I. Terrén, A. Orrantia, R. Pérez-Garay, F. Vidal, J.A. Iribarren, C. Rodríguez, A.M. López Lirola, E. Bernal, O. Zenarruzabeitia and **F. Borrego**. 2019. CD300a inhibits CD16-mediated NK cell effector functions in HIV-1-infected patients. XI Congreso Nacional de GESIDA 2019. December 10-13. Toledo, Spain.

47. O. Zenarruzabeitia, J. Vitallé, I. Terrén, A. Orrantia, A. Bilbao, I. Jauregui, M.D. Martínez, P.M. Gamboa and **F. Borrego**. 2020. Immunological changes, including CD300 molecules expression, during allergen desensitization immunotherapy. EAACI (European Academy of Allergy & Clinical Immunology) Congress 2020. June 6-10, London, UK.

48. C.L. Pranger, J.F. Singer, V.K. Köhler, I. Pali-Schöll, A. Fiocchi, O. Zenarruzabeitia, **F. Borrego**, K.M. Ilieva, S.N. Karagiannis and E. Jensen-Jarolim. 2020. PIPE-cloned human IgG4 antibodies inhibit activation of human basophils sensitized with IgE antibodies specific for the major milk allergen beta-lactoglobulin in basophil activation tests (BAT). EAACI (European Academy of Allergy & Clinical Immunology) Congress 2020. June 6-10, London, UK.

49. I. Terrén, A. Orrantia, A. Mosteiro, J. Vitallé, G. Astarloa-Pando, O. Zenarruzabeitia and **F. Borrego.** 2021 Long-lasting metabolic reprogramming of human cytokine-induced memory-like Natural Killer cells. I Congreso Annual de Estudiantes de Doctorado. Universidad Miguel Hernández. February 2. Online. Spain.

50. A. Orrantia, I. Terrén, A. Izquierdo-Lafuente, J.A. Alonso-Cabrera, V. Sandá, J.

Vitallé, G. Astarloa-Pando, S. Moreno, M. Tasias, A. Uranga, C. González, J.J. Mateos, J.C. García-Ruiz, O. Zenarruzabeitia and **F. Borrego**. 2021. A NKp80-based identification strategy reveals that CD56neg NK cells are not completely dysfunctional in health and disease. 42 Annual Meeting of Spanish Association of Immunology. March 24-26. Online. Spain.

51. I. Terrén, A. Orrantia, A. Mosteiro, J. Vitallé, G. Astarloa-Pando, O. Zenarruzabeitia and **F. Borrego.** 2021. Metabolic reprogramming and glycolytic-requirements of human cytokine-induced memory-like NK cells. 42 Annual Meeting of Spanish Association of Immunology. March 24-26. Online. Spain.

52. O. Zenarruzabeitia, J. Vitallé, Merino, I. Terrén, A. Orrantia, G. Astarloa-Pardo, A. Pacho, B. de Andrés and **F. Borrego.** Blood $IgM^{high}CD300a+$ B cells are circulating marginal zone-like IgM memory B cells and respond to pneumococcal polysaccharides. 42 Annual Meeting of Spanish Association of Immunology. March 24-26. Online. Spain.

53. **F. Borrego,** G. Astarloa-Pando, I. Terrén, A. Orrantia, R. Pérez-Garay, I. Seijas-Betolaza, J. Nieto-Arana, N. Imaz-Ayo, S. Pérez-Fernández, E. Arana-Arri and O. Zenarruzabeitia. T cell activation, highly armed cytotoxic cells and a sharp shift in monocytes CD300 receptors expression is characteristic of patients with severe COVID-19. 42 Annual Meeting of Spanish Association of Immunology. March 24-26. Online. Spain.

54. C.L. Pranger, J.F. Singer, V.K. Koehler, I. Pali-Schoell, A. Fiocchi, S.N. Karagiannis, O. Zenarruzabeitia, **F. Borrego** and E. Jensen-Jarolim. 2021. New tools in basophil activation tests (BAT): PIPE-cloned human IgE, IgG1, and IgG4 antibodies specific for the major milk allergen beta-lactoglobulin (BLG). Mainzer Allergy WS (DGAKI). March 25-26. Online. Germany.

55. **F. Borrego,** G. Astarloa-Pando, A. Orrantia, R. Pérez-Garay, I. Seijas-Betolaza, J. Nieto-Arana, N. Imaz-Ayo, S. Pérez-Fernández, E. Arana-Arri and O. Zenarruzabeitia. 2021. Identification of immune cells changes that associate with severe COVID-19. II Congreso Nacional Multidisciplinar COVID-19 de las Sociedades Científicas de España. April 12-16. Online. Spain.

56. A. Orrantia, E. Vázquez de Luis, I. Terrén, G. Astarloa-Pando, C. González, A. Uranga, J.J. Mateos, J.C. García-Ruiz, M. Riñón, M. Rey, A. Dopazo, O. Zenarruzabeitia and **F. Borrego.** 2021. El perfil transcriptómico de las células NK se ve alterado inmediatamente después del trasplante autólogo de precursores hematopoyéticos. XXVII Congreso Anual ASOVASNA (Asociación Vasco Navarra de Hematología). May 12-13. Online. Spain.

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