Plan Overview

A Data Management Plan created using DMPonline

Title: The LPA1 receptor as a possible biomarker of vulnerability to depression. Role in microglial sensitization and neurogenic changes induced by juvenile stress. (DEPREPrimBRAIN)

Creator: Carmen Pedraza Benítez

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Template: DCC Template

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Project abstract:

Depression is a highly prevalent disease with devastating consequences, and depression diagnoses are increasing at an alarming rate, with a higher prevalence among females. Nevertheless, the underlying neurobiological mechanisms of mood disorders remain poorly understood.

Numerous studies have postulated that neuroinflammation mediated by microglia during sensitive periods of development contributes to the physiopathology of depression. The increase in inflammation can induce microglial priming that enhances susceptibility to secondary stress, which may trigger exaggerated inflammation. In addition, microglia are also an important regulator of hippocampal neurogenesis, which reduction have been linked to the neuropathology of stress-related mood disorders. When microglia are sensitized, the impact of stress on neurogenesis can be enhanced after a second inflammatory hit. Nevertheless, to date, studies aimed at determining the effects of stress on the interaction between microglia and neurogenesis have addressed the problem from very one-sided and unidirectional perspectives. Microglia are extremely sensitive to minor alterations in the central nervous system microenvironment, acting as sensors of local apoptotic and antineurogenic signals. Given that stress-induced apoptosis of newborn neurons is not unreasonable, we assume that neurogenic impairments may also contribute to microglial priming. However, despite the progress made, it is not currently known in detail how stress modulates microglial priming and neurogenic changes.

Identifying the biological factors that may be involved in microglial and neurogenic changes induced by stress early in development and that may increase the risk of developing mood disorders is essential for finding new potential therapeutic targets. The LPA1 receptor may be one such example.

Our group has identified the LPA1 receptor as a molecular factor that regulates neurogenesis in response to stress and is involved in mood regulation; dysfunction of LPA1 results in a phenotype of low resilience and is involved in the aetiology of depression. Moreover, microglial cells express LPA1 receptors; therefore, it would be reasonable to assume that LPA can play a role in the functional regulation of microglia. However, considerable heterogeneity has been observed in the microglial response to LPA, which acts as both a proinflammatory and anti-inflammatory molecule. This response may differ depending on the degree of maturity and the activation status of microglia. For this reason, we propose to study for the first time the impact of stress during the sensitive period of development on adulthood vulnerability to depression, focusing on the bidirectional crosstalk between microglial priming and neurogenic dysfunction and the participation of LPA1 receptors in these processes. In addition, we propose to study whether the degree of expression of the LPA1 receptor is related to the risk of developing depressive symptoms after exposure to a second stressor so that it can be used as a possible biomarker of vulnerability to the development of depression. In addition, in animal models, increased vulnerability to the negative effects of stress and the development of depression has been observed in females, but the existence of sexual differences in the expression of LPA1 receptors has not been explored, therefore, will are to explore this possibility.

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The LPA1 receptor as a possible biomarker of vulnerability to depression. Role in microglial sensitization and neurogenic changes induced by juvenile stress. (DEPREPrimBRAIN)

Data Collection

What data will you collect or create?

The main objective of this project is to study (in animal models) the impact of stress during sensitive periods of development on vulnerability to depression in adulthood and the involvement of the microglial LPA1 receptor in this process. In addition, sex differences will be determined. Based on “two-hit” hypothesis, in mice, we will start with application of an intermittent juvenile stress and the application of a second acute stress in the adult period. the effects on depression and anxiety-like behaviours will be assessed. In addition, the response of microglia, neurogenic changes, and the expression of LPA1 receptors in microglia will be studied. The data collection will be generated from experimental protocol.The results obtained in the experiments will be plotted in Excel (Microsoft) software, images and videos will be stored in the cloud and on external hard disks.

This project investigates the impact of stress during sensitive developmental windows on microglial reactivity, neurogenesis, and depression-like behavior, with a focus on the role of the LPA1 receptor. Data are collected weekly and stored in the Google Drive repository of the University of Málaga.

Collected data include behavioral videos (in .mp4 format), microscopy images (in .tiff), and numerical data (in .xlsx files). Data is organized by experimental group, sex, and measurement type (behavioral, cellular, molecular). All animal experiments include both male and female mice.

Experimental groups follow hypotheses such as:
- Two-hit model with moderate/intense juvenile stress: C (Control), JS (Juvenile Stress), AS (Adult Stress), JS+AS (Combined Stress).
- Postnatal maternal separation: C, MS, AS, MS+AS.
- Limited bedding model: C, LB.
- PTSD model: Controls and stressed.
- JS + TMZ (neurogenesis inhibition): VEH, TMZ.
- JS + adult neurogenic stimulation in memory tasks.
- LPA1 knockout mice: social behavior, circadian rhythms, and HPA axis (dexamethasone suppression test).
- LPA1 pathway antagonism via ICV BRP-LPA.

How will the data be collected or created?

- Behavioural tests:

Hedonic behavioural data using the saccharin preference test, social behaviour in the social interaction test, recognition memory in the object recognition test and motivation and fatigability with the nest building test.

- Immunocytochemistry:

For neurogenesis and microglia studies (light microscopy and immunofluorescence).

- Cell quantifications:

Use of image analysis and stereology software.

- Molecular studies:

Determination of hippocampal cytokines (using luminex); study of hippocampal proteins using Quadrupole-Orbitrap Mass Spectrometry (Q-Orbitrap-MS) and western-blotting.

- Hormonal determinations in Plasma and serum:

Using a commercially available Enzyme Immunoassay Kit.

Analysis Methods

Behavioral, cellular, and molecular data have been analyzed using multivariate methods such as PCA, hierarchical clustering, and repeated-measures or one-way ANOVAs with post hoc comparisons.

Mediation analysis was used to test whether changes in microglia mediate effects on neurogenesis, and whether neurogenesis mediates effects on behavior and microglial activity. Proteomic analyses and Western blot imaging (5 replicates/treatment) were also performed, including the analysis of Lysophosphatidic acid receptor 1 (LPA1).

Protein expression was quantified for IBA1 and GFAP using Western blot. Immunofluorescence staining combined with 3D modeling in IMARIS software was used to analyze microglial phagocytic activity (IBA1/PSD95), and microglial volume and PSD95 puncta were quantified in GFP+ cells.

Documentation and Metadata

What documentation and metadata will accompany the data?

- Videos from animals’ behavioural tests.
- Microphotographs taken from immunohistochemistry and confocal studies. Scanned hippocampal images for microglia studies.
- Data from molecular analysis (proteomic) and gene expression of myelin genes, growth factors, cytokines, endoplasmic reticulum stress and Unfolded protein response.
- All the data collected from behavioural analyses, immunocytochemical studies, cellular quantifications and molecular studies will be organised in Excel data sheets, separated in experimental groups (control; juvenile stress; adult stress and juvenile + adult stress) and organized by sex.
- Research data alongside files generated from analysis (SPPS / Excel) will be stored for 10 years from the completion date of the studies at the University of Malaga, within a password protected server (GoogleDrive) and y two separated external hard disk. Estimates that the volume of data will exceed TB.

- https://dx.doi.org/10.24310/riuma.26238
  - https://dx.doi.org/10.24310/riuma.26229
  - The proteomics data derived from this project are openly available through the institutional repository of the University of Málaga (RIUMA) under the following DOIs:

All data files are annotated with consistent naming conventions and a variable dictionary is maintained. This includes descriptions of variables, abbreviations, units, sex, and experimental conditions.

Markers and abbreviations:
- Microglial and inflammatory markers: IBA-1, IL-1β, IL-2, IL-4, IL-6, TNF-α, IFN-γ, VEGF.
- Neurogenesis: DCX, Ki67, BrdU, CldU, IdU.
- Western blot targets: IBA1, GFAP, LPA1 receptor.
- 3D modeling of microglial phagocytosis: IBA1/PSD95, GFP+ cells analyzed in IMARIS.

Ethics and Legal Compliance

How will you manage any ethical issues?

All experimental procedures involving animals have been conducted in accordance with current European and Spanish legislation on the protection of animals used for scientific purposes (Directive 2010/63/EU and Spanish Royal Decree 53/2013). The protocols were approved by the Ethics Committee of the University of Málaga (CEUMA 128/2021-A) and the Directorate General for Agricultural and Livestock Production of the Andalusian Regional Government (25/01/2022/004). All researchers involved in animal work hold the required accreditations.

This project does not involve the collection, processing, or storage of personal or sensitive data. Nevertheless, principles of data protection and responsible research conduct are observed throughout the project

How will you manage copyright and Intellectual Property Rights (IPR) issues?

The data generated under this project will be owned by the University of Málaga. The Agencia Estatal de Investigación (AEI), Ministerio de Ciencia e Innovación (Spain), which funds the project (PID2020-117464RB-I00/AEI/10.13039/501100011033), will be acknowledged in all scientific outputs derived from the project. Any results with potential for intellectual property protection will be safeguarded through appropriate patent or licensing mechanisms. When results are published in scientific journals, they will be subject to licensing or editorial policy restrictions.

Data sharing will require the data use agreement from the Principal Investigators (Dr. Carmen Pedraza, mdpedraza@uma.es; Dr. Margarita Pérez (marper@uma.es) and the investigators who have participated in the collection and/or processing of the data concerned.

Storage and Backup

How will the data be stored and backed up during the research?

All data will be stored in the cloud (Google Drive). Simultaneously a backup of the data will be stored in two hard drives kept in different (guarded by the two principal investigators of the project)

All data is stored on Google Drive and backed up weekly onto two external hard drives kept in secure locations by the PIs. Video, image, and spreadsheet data are protected via restricted access and passwords. The Google Drive account used is managed through our institutional account at the University of Málaga.

How will you manage access and security?

The access to the cloud data depends on sharing authorization and password, which will be available only to authorized people with research purposes only.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

All the research data will be kept for 10 years in our servers and in the cloud (GoogleDrive).

All research data will be preserved for a minimum of 10 years. Non-essential data (e.g., pilot images) may be excluded. Datasets will be made publicly available in RIUMA following publication.

What is the long-term preservation plan for the dataset?

All the research data will be kept for 10 years.

Data Sharing

How will you share the data?

All data resulting from the development of this project will be available in scientific communications presented at conferences and in manuscripts that will be published in peer-reviewed scientific journals. As far as possible, they will be open access or, once the data have been presented, they will be made available to the public through the institutional repository (RIUMA). In addition, they will be disseminated to society through the participation of research and work teams in science dissemination activities.

This project aligns with the Open Science principles promoted by the AEI and Horizon Europe, ensuring data will be as open as possible, as closed as necessary.

- Proteomic dataset 1: https://dx.doi.org/10.24310/riuma.26238
- Proteomic dataset 2: https://dx.doi.org/10.24310/riuma.26229

Please note that the following RIUMA links correspond to deposited proteomic datasets, not to the data management plan or general project documentation:

Data will be available post-publication through open-access repositories, under embargo beforehand. Requests require PI approval and a data use agreement.

The research outputs of this project include peer-reviewed publications, conference communications, publicly available datasets (e.g., proteomics data deposited in the RIUMA repository), and several science communication activities. All outputs acknowledge the funding agency (Agencia Estatal de Investigación, **PID2020-117464RB-I00/AEI/10.13039/501100011033**) and comply with the principles of Open Science. A detailed list of outputs is provided below and will be updated throughout the project as additional results become available.

Data will be available post-publication through open-access repositories, under embargo beforehand. Requests require PI approval and a data use agreement.

In the Research Output section, some materials may appear as restricted access for legal, ethical, or editorial reasons. These materials can be made available to interested researchers upon justified request to the Principal Investigator. In some cases, access is limited because the output derives from conference presentations for which no persistent or public record is available.

Are any restrictions on data sharing required?

The use of the data may only be used for scientific purposes or for the dissemination of science.

Responsibilities and Resources

Who will be responsible for data management?

The project coordinators (Carmen Pedraza and Margarita Pérez-Martín)

Data management is overseen by the PIs, Carmen Pedraza and Margarita Pérez-Martín. The University of Málaga provides IT and data services to ensure secure storage, access, and long-term preservation.

What resources will you require to deliver your plan?

The IT services and general library of the University of Malaga currently have all the necessary resources to meet the requirements of this research data management plan.

Additional Requirements Based on AEI Template

The total data volume generated during the project is approximately 400 GB, mostly due to high-resolution behavioral videos (around 300 GB), microscopy images in TIFF format (~70 GB), and Excel files with numerical data (~30 GB).

Version control is implemented through timestamped folders and weekly backups, ensuring chronological tracking of all data changes.

Although no formal metadata standards are used, internal metadata follow consistent naming and structuring conventions. If deposited in RIUMA, Dublin Core metadata standards are applied.

Variable naming, group coding (C, JS, AS, etc.), and sex identification follow consistent internal conventions to facilitate data interoperability across analyses.

No specific budget has been allocated for data management, and responsibilities are covered by the Principal Investigators as part of their academic and project duties.

Long-term preservation will be ensured via institutional repositories and external backups. No additional costs are foreseen beyond the project's duration.

This Data Management Plan was developed using the AEI template based on DMPonline (https://dmponline.dcc.ac.uk).

Planned Research Outputs

Dataset - "Dataset Orbitrap Raw-Data Stress Hypothalamus(1h-24h)"

Data obtained from hypothalamic proteomics 1 and 24 hours after acute and intense stress
https://dx.doi.org/10.24310/riuma.26229

Dataset - "Dataset Orbitrap Raw-Data Stress Hippocampus(1h-24h)"

Data obtained from hippocampal proteomics 1 and 24 hours after acute and intense stress

https://dx.doi.org/10.24310/riuma.26238

Audiovisual - "Stress-induced depression: underlying mechanisms"

podcasts especializados

https://creators.spotify.com/pod/profile/take-it-simple1/episodes/Depresin-inducida-por-estrs-y-mecanismos-implicados--con-Cat--Carmen-Pedraza-I-Episodio-41-e1vd05l

Publication - "The magic pill against depression"

"La pastilla mágica contra la depresión" en la revista Nova Ciencia (nº 189, abril 2023), de acceso público y alta difusión regional, lo que ha contribuido a visibilizar los avances del proyecto en un lenguaje accesible para el público general (https://novaciencia.es/wp-content/uploads/2023/04/Nova-Ciencia-189-abril-2023-especial-masteres-uclm-umu-upct-ua-umh-upv-uah.pdf).

Publication - "Shedding Light on the Darkness of Depression and How to Treat It."

Infantes-López MI, Pérez-Martín M y Pedraza C. Esclareciendo la oscura depresión y cómo tratarla. Panorama Social, vol 38, págs. 39-51, 2023.
https://www.funcas.es/articulos/esclareciendo-la-oscura-depresion-y-como-tratarla/

Publication - "Antidepressants: A Ray of Light Less Bright Than It Seems?"

Infantes-López MI, Pedraza C y Pérez-Martín M. Antidepresivos: ¿un rayo de luz menos brillante de lo que parece?The Conversation, nov 2022.
https://theconversation.com/antidepresivos-un-rayo-de-luz-menos-brillante-de-lo-que-parece-193119

Event - "Early stress and depression"

Speakers at the I Neuroscience Colloquium – Ciencia en tu Comunidad, Junín (Peru), 18 Dec 2021.

Event - "Depression: Fighting the next pandemic."

"Science in Small Doses" – European Researchers' Night (September 2023): Workshop *"Depression: Fighting the next pandemic."*
➤ Event

Event - "Could my gut be the key to my mental health?""

Speaker at Pint of Science 2024 (Area: Wonderful Mind). Talk: *"Could my gut be the key to my mental health?"* May 2024.

Audiovisual - "Do We Have Two Brains? The Gut–Brain Axis and Its Link to Mental Illness."

Participation in the radio program *Hoy por Hoy Málaga* (Cadena SER): "Do We Have Two Brains? The Gut–Brain Axis and Its Link to Mental Illness." Broadcast on August 27, 2024. M.I. Infantes López.

Event - "Neurogenesis and neurological effects of drugs"

Science outreach project "Como tú" – Talks in primary and secondary schools on neurogenesis and neurological effects of drugs (May–June 2024).

Event - "The STRESSed Mind"

Speaker and organiser – "Night in the Classrooms 2024" (April–May 2024). Part of UMA Divulga's Annual Science Dissemination Plan

Event - "StresadaMENTE: How does stress affect your brain?""

Science in Small Doses" – European Researchers' Night (September 2023, 2024 and 2025): Workshop *"StresadaMENTE: How does stress affect your brain?"*

https://lanochedelosinvestigadores.fundaciondescubre.es/malaga/?tematica=psicologia&tipo=taller

Event - "Mind Under Stress"

III Women in Neuroscience Day: Planting the Future. *"StresadaMENTE"* talk. University of Málaga. Publications and Scientific Dissemination Office. February 2024.

Event - "Stress and brain"

UNISTEM Day 2024. Speakers and monitors on 22 March 2024, as part of the Annual Science Dissemination Plan (UMA). M.I. Infantes López & J. Muñoz Martín.

Event - "StresadaMENTE"

IV Women in Neuroscience Day: Planting the Future. *"StresadaMENTE"* talk. University of Málaga. Publications and Scientific Dissemination Office. February 2025.

Event - "Sexual Differences in Stress Response: The Role of Microglia and Neurogenesis"

Name of the congress/conference/workshop: Sociedad Española de Neurociencia (SENC) 2025. Sexual Differences in Stress Response: The Role of Microglia and Neurogenesis

Type of presentation: Poster

Authors: Chaves-Peña, P., Infantes-López, M.I., Munoz-Martin, J. Nieto-Quero, A, Zambrana-Infantes, E., Ramírez-Pérez, C., Pérez-Martín, M., Pedraza, C.

Year: 2025

Event - "Sex-Dependent Effects of Juvenile and Adult Stress on LPA1 Receptor Expression and Depression-Like Behaviors in Mice"

Name of the congress/conference/workshop: Sociedad Española de Neurociencia (SENC) 2025. Sex-Dependent Effects of Juvenile and Adult Stress on LPA1 Receptor Expression and Depression-Like Behaviors in Mice

Type of presentation: Poster

Authors: *: Víctor Martín-Aguiar, Alejandro Zea-Dona, Jose Munoz-Martin, Patricia Chaves-Peña, Cristina Ramirez-Pérez, María Inmaculada Infantes López,

Margarita Pérez-Martín, Carmen Pedraza

Year: 2025

Event - "Sexual differences in stress-responsive behavior and resiliency of adult mice exposed to maternal separation during infancy."

Name of the congress/conference/workshop: Sociedad Española de Neurociencia (SENC) 2025. Sexual differences in stress-responsive behavior and resiliency of adult mice exposed to maternal separation during infancy.

Type of presentation: Poster

Authors: J. Munoz-Martin, P. Chaves-Peña, M.I. Infantes-Lopez, V. Martin-Aguiar, E. Zambrana-Infantes, C. Ramirez-Pérez, A. Zea-Dona, C. Pedraza, M. Perez-Martin

Year: 2025

Event - "Differential Impacts of Acute, Chronic, and Social Defeat Stress on Microglial Morphology in the Amygdala and Habenula"

Name of the congress/conference/workshop: Sociedad Española de Neurociencia (SENC) 2025: Differential Impacts of Acute, Chronic, and Social Defeat Stress on Microglial Morphology in the Amygdala and Habenula

Type of presentation: Poster

Authors: Autores/as*: A. Zea-Doña, A. Nieto-Quero, M.I. Infantes-López, A. Arjona, S. Tabbai, E. Zambrana-Infantes, P. Chaves-Peña, V. Martin-Aguiar, J. Munoz-Martín, M.J. Blanca, M. Pérez-Martín, C. Pedraza.

Year: 2025

Publication - "Sex matters: how stress at different life stages affects males and females differently"

Name of the congress/conference/workshop: I Congreso de la Red Española de Investigación en Estrés (REIS). Sex matters: how stress at different life stages affects males and females differently

Type of presentation: Oral presentation https://riuma.uma.es/xmlui/handle/10630/39487

Authors: Víctor Martín-Aguiar, Jose Munoz-Martin, Cristina Ramirez-Pérez, Patricia Chaves-Peña, Alejandro Zea-Doña, María Inmaculada Infantes-López, Margarita Pérez-Martín, Carmen Pedraza

Year: 2025

Publication - "mpact of chronic stress on hippocampal microglia and neurogenesis: implications of the LPA-LPA1 pathway modulation in mice."

Name of the congress/conference/workshop: I Congreso de la Red Española de Investigación en Estrés (REIS). Impact of chronic stress on hippocampal microglia and neurogenesis: implications of the LPA-LPA1 pathway modulation in mice.

Type of presentation: Poster https://hdl.handle.net/10630/39432

Authors: **Zea-Doña, A.; Nieto-Quero, A.; Muñoz-Martín, J.; Martín-Aguiar, V.; Infantes-López, M. I.; Pérez-Martín, M.; Pedraza, C** .

Year:2025

Event - "Diferencias sexuales en la neurogénesis hipocampal adulta de ratones expuestos a estrés durante el periodo postnatal."

Name of the congress/conference/workshop: V Jornada de Seguimiento del Programa de Doctorado de Biotecnología Avanzada. Diferencias sexuales en la neurogénesis hipocampal adulta de ratones expuestos a estrés durante el periodo postnatal.

Type of presentation: Poster

Authors: Munoz-Martin J.

Year: 2024

Event - "Efecto del estrés temprano en la depresión: Diferencias sexuales en la interacción entre microglía y neurogénesis."

Name of the congress/conference/workshop: III Jornadas interuniversitarias de estudiantes de doctorado en Psicología, Universidad de Málaga-Universidad de Granada. Efecto del estrés temprano en la depresión. Diferencias sexuales en la interacción entre microglía y neurogénesis.

Type of presentation: Oral presentation

Authors: Chaves-Peña, Patricia

Year: 2024

Publication - "Sexual differences in depressive-like behaviors after juvenile and adult stress."

Name of the congress/conference/workshop: FENS Forum 2024, Viena (Austria). Sexual differences in depressive-like behaviors after juvenile and adult stress.

Type of presentation: Poster https://hdl.handle.net/10630/31955

Authors: Aguiar-Martín, Victor; Muñoz-Martín, José; Chaves-Peña, Patricia; Infantes-López, M. Inmaculada; Pérez-Martín, Margarita; Pedraza-Benítez, María del Carmen

Year: 2024

Publication - "Hippocampal neurogenesis changes in a sex and region-specific manner in adult mice subjected to maternal separation as an early life stress."

Name of the congress/conference/workshop: FENS Forum 2024, Viena (Austria). Hippocampal neurogenesis changes in a sex and region-specific manner in adult mice subjected to maternal separation as an early life stress.

Type of presentation: Poster https://hdl.handle.net/10630/31846

Authors: *: Munoz-Martin J, Chaves-Peña P, Infantes-López MI, Zambrana-Infantes E, Nieto-Quero A, Carayol-Gordillo V, Martín-Aguiar V, Zea-Doña A, Pedraza C, Pérez-Martín M

Year: 2024

Publication - "Female microglia and neurogénesis respond differently to social defeat compared to males."

Name of the congress/conference/workshop: FENS Forum 2024, Viena (Austria). Female microglia and neurogénesis respond differently to social defeat compared to males.

Type of presentation: Poster https://hdl.handle.net/10630/31876

Authors: Infantes-López MI, Zambrana-Infantes E, Chaves-Pena P, Carayol-Gordillo V, Nieto-Quero A, Munoz-Martin J, Zea-Dona A, Pedraza C, Pérez-Martín M.

Year: 2024

Event - "Desentrañando la depresión inducida por estrés: El papel de la neuroinflamación y neuroplasticidad revelado por modelos animales."

Name of the congress/conference/workshop: Workshop en Psiconeuroinmunología. Desentrañando la depresión inducida por estrés: El papel de la neuroinflamación y neuroplasticidad revelado por modelos animales.

Type of presentation: Oral presentation

Authors: Pedraza, C

Year: 2024

Event - "Efecto del estrés temprano en la depresión. Diferencias sexuales en la interacción entre microglía y neurogénesis."

Name of the congress/conference/workshop: III Jornadas interuniversitarias de estudiantes de doctorado en Psicología, Universidad de Málaga-Universidad de Granada. Efecto del estrés temprano en la depresión. Diferencias sexuales en la interacción entre microglía y neurogénesis.

Type of presentation: Elevator pitch

Authors: Chaves-Peña, P.

Year: 2023

Publication - "Sexual differences of hipocampal microglía of adult mice subjected to maternal separation stress."

Name of the congress/conference/workshop: IBRO. Sexual differences of hipocampal microglía of adult mice subjected to maternal separation stress.

Type of presentation: Oral presentation https://hdl.handle.net/10630/27687

Authors: **Munoz-Martín, J., Infantes-López, M.I., Chaves-Peña, P., Nieto-Quero, A., Zambrana-Infantes, E., Pedraza, C., Pérez-Martín, M.**

Year: 2023

Publication - "Mild juvenile stress increases resilience to the development of anxious behaviors and prevents neurogenic reduction after stress exposure in adulthood."

Name of the congress/conference/workshop: IBRO. Mild juvenile stress increases resilience to the development of anxious behaviors and prevents neurogenic reduction after stress exposure in adulthood.

Type of presentation: Poster https://hdl.handle.net/10630/27678

Authors: Chaves-Peña, P., Infantes-López, M.I., Nieto-Quero, A., Zambrana-Infantes, E., Munoz-Martin, J., Pérez-Martín, M., Pedraza, C.

Year: 2023

Publication - "Effects of chronic stress on hippocampal microglia and neurogenesis of mice under social defeat stress."

Name of the congress/conference/workshop: FENS Forum 2022, París (Francia). Effects of chronic stress on hippocampal microglia and neurogenesis of mice under social defeat stress.

Type of presentation: Poster https://hdl.handle.net/10630/24785

Authors: **Muñoz-Martín, J., Infantes-López, M.I., Chaves-Peña, P., Nieto-Quero, A., Zambrana-Infantes, E., Pedraza, C., Pérez-Martín, M.**

Year: 2022

Publication - "cute psychological stress: effects on hippocampal neurogenesis and the role of microglía."

Name of the congress/conference/workshop: FENS Forum 2022, París (Francia). Acute psychological stress: effects on hippocampal neurogenesis and the role of microglía.

Type of presentation: Poster https://hdl.handle.net/10630/24792

Authors: Autores/as*: Nieto-Quero, A., Chaves-Peña, P., Infantes-Lopez, M.I., Zambrana-Infantes, E., Tabbai, S., Muñoz-Martín, J., Pérez-Martín, M., Pedraza, C.

Year: 2022

Conference paper - "Gut microbiome specific changes in different behavioral profiles in a mouse social defeat stress model."

Name of the congress/conference/workshop: IBRO. Gut microbiome specific changes in different behavioral profiles in a mouse social defeat stress model.

Type of presentation: Poster https://hdl.handle.net/10630/27685

Authors: Autores/as*: Infantes-López, M. I., Nieto-Quero, A., Chaves-Peña, P., Zambrana-Infantes, E., Cifuentes, M., Márquez, J., Pedraza, C., & Pérez-Martín M.

Year: 2023

Event - "Microglia as mediators of hipocampal neurogenic impairment in stress-sensitive animals"

Name of the congress/conference/workshop: SENC-IBRO. Microglia as mediators of hipocampal neurogenic impairment in stress-sensitive animals

Type of presentation: Flash-talk

Authors: Infantes-López, M.I., Zambrana-Infantes, E., Chaves-Peña, P., Nieto-Quero, A., Munoz-Martin, J., Pedraza, C., Pérez-Martín, M.

Year: 2023

Event - "Avances en la investigación biomédica y Biotecnológica". Behavioral, microglial and neurogenic alterations in a social defeat stress model"

Name of the congress/conference/workshop: IX Jornadas Doctorales Internacionales: "Avances en la investigación biomédica y Biotecnológica". Behavioral, microglial and neurogenic alterations in a social defeat stress model.

Organised by: Universidad de Jaen.

Type of presentation: Oral presentation

Authors: Infantes−López MI

Year:2022

Event - "Efecto del estrés temprano y adulto en la neurogénesis del giro dentado y en la conducta relacionada con la depresión."

Name of the congress/conference/workshop: II Jornadas interuniversitarias de estudiantes de doctorado en Psicología, Universidad de Málaga-Universidad de Granada. Efecto del estrés temprano y adulto en la neurogénesis del giro dentado y en la conducta relacionada con la depresión.

Type of presentation: Oral presentation

Authors: Chaves-Peña, P.

Year: 2022

Event - "Social defeat stress induced depression phenotype and lower hipocampal neurogenesis."

Name of the congress/conference/workshop: IV Jornada de seguimiento del Programa de doctorado de Biotecnología Avanzada. Universidad de Málaga Social defeat stress induced depression phenotype and lower hipocampal neurogenesis.

Type of presentation: Oral presentation

Authors: Infantes−López MI

Year: 2022

Event - "Social defeat stress induced depression phenotype and lower hippocampal neurogénesis."

Name of the congress/conference/workshop: ECNP Immuno-Neuropsychiatry Summer School from University of Bordeaux (Francia). Social defeat stress induced depression phenotype and lower hippocampal neurogénesis.

Type of presentation: Oral presentation

Authors: Infantes−López MI, Zambrana-Infantes E, Chaves-Peña P, Nieto-Quero A, Muñoz-Martín J, Pedraza C and Pérez-Martín, M.

Year: 2022

Event - "Uso de modelos animales para el estudio del estrés. Microglía y neurogénesis en el modelo de estrés por derrota socia"

Name of the congress/conference/workshop: Conference: “Uso de modelos animales para el estudio del estrés. Microglía y neurogénesis en el modelo de estrés por derrota social”

Organised by: Grupo de Investigación en Neurociencia Aplicada (GINA) y la Comisión de Investigación de la Escuela de Biología de la Universidad Nacional Autónoma de Honduras.

Type of presentation: Oral presentation

Authors: Muñóz-Martín J.

Year: 2021

Event - "Estrés y su efecto en la neurogénesis hipocampa"

Name of the congress/conference/workshop: Conference: “Estrés y su efecto en la neurogénesis hipocampal”

Organised by: Grupo de Investigación en Neurociencia Aplicada (GINA) y la Comisión de Investigación de la Escuela de Biología de la Universidad Nacional Autónoma de Honduras.

Type of presentation: Oral presentation

Authors. Pérez-Martín, M

Year: 2021

Event - "Uso de modelos animales para el estudio del estrés. Estrés por derrota social: Un estudio en modelos animales adaptado para hembras y machos"

Name of the congress/conference/workshop: Conference: “Uso de modelos animales para el estudio del estrés. Estrés por derrota social: Un estudio en modelos animales adaptado para hembras y machos”

Organised by: Grupo de Investigación en Neurociencia Aplicada (GINA) y la Comisión de Investigación de la Escuela de Biología de la Universidad Nacional Autónoma de Honduras.

Type of presentation: Oral presentation

Authors: Infantes-López I.

Year:2021

Event - "Uso de modelos animales para el estudio del estrés. Estrés en la preadolescencia: diseño experimental de un estudio basado en la hipótesis de los dos hitos"

Name of the congress/conference/workshop: Conference: “Uso de modelos animales para el estudio del estrés. Estrés en la preadolescencia: diseño experimental de un estudio basado en la hipótesis de los dos hitos”

Organised by: Grupo de Investigación en Neurociencia Aplicada (GINA) y la Comisión de Investigación de la Escuela de Biología de la Universidad Nacional Autónoma de Honduras.

Type of presentation: Oral presentation

Journal article - " Social avoidance and altered hypothalamic-pituitary-adrenal axis in a mouse model of anxious depression: The role of LPA1 receptor. "

Moreno-Fernández, R.D. Sampedro-Piquero, P. Gómez-Salas, F.J. **Nieto-Quero, A**. Estivill-Torrús, G. Rodríguez de Fonseca, F. Santín, L.J. **Pedraza, C**. Social avoidance and altered hypothalamic-pituitary-adrenal axis in a mouse model of anxious depression: The role of LPA1 receptor. Behavioural Brain Research. 455 (2023). https://doi.org/10.1016/J.BBR.2023.114681

Journal article - "Unveiling the Secrets of the Stressed Hippocampus: Exploring Proteomic Changes and Neurobiology of Posttraumatic Stress Disorder."

Nieto-Quero, A.; Infantes-López, M.I.; Zambrana-Infantes, E.; Chaves-Peña, P.; Gavito, A.L.; **Munoz-Martin, J.; Tabbai, S**.; Márquez, J.; Rodríguez de Fonseca, F.; García-Fernández, M.I, Santín L, **Pedraza C**, **Pérez-Martín M**, Unveiling the Secrets of the Stressed Hippocampus: Exploring Proteomic Changes and Neurobiology of Posttraumatic Stress Disorder. Cells 12(18), (2023). https://doi.org/10.3390/cells12182290.

Journal article - "New insights into hypothalamic neurogenesis disruption after acute and intense stress: implications for microglia and inflammation."

I Infantes-López, A Nieto-Quero, P Chaves-Peña, E Zambrana-Infantes, M Cifuentes , J Márquez, **C Pedraza** and **M Pérez-Martín**. New insights into hypothalamic neurogenesis disruption after acute and intense stress: implications for microglia and inflammation. Front. Neurosci. (2023). IF: 5.152 (Q2). DOI:10.3389/fnins.2023.1190418.

Planned research output details

Title	DOI	Type	Release date	Access level	Repository(ies)	File size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Dataset Orbitrap Raw-Data Stress Hypothalamus(1h-2 ...	https://dx.doi.org/10.24310/riuma.26229...	Dataset	Unspecified	Open	None specified		None specified	None specified	No	No
Dataset Orbitrap Raw-Data Stress Hippocampus(1h-24 ...	https://dx.doi.org/10.24310/riuma.26238...	Dataset	Unspecified	Open	None specified		None specified	None specified	No	No
Stress-induced depression: underlying mechanisms		Audiovisual	Unspecified	Open	None specified		None specified	None specified	No	No
The magic pill against depression		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Shedding Light on the Darkness of Depression and H ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Antidepressants: A Ray of Light Less Bright Than I ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Early stress and depression		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Depression: Fighting the next pandemic.		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Could my gut be the key to my mental health?”		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Do We Have Two Brains? The Gut–Brain Axis and Its ...		Audiovisual	Unspecified	Open	None specified		None specified	None specified	No	No
Neurogenesis and neurological effects of drugs		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
The STRESSed Mind		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
StresadaMENTE: How does stress affect your brain?”		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Mind Under Stress		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
Stress and brain		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
StresadaMENTE		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Sexual Differences in Stress Response: The Role of ...		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Sex-Dependent Effects of Juvenile and Adult Stress ...		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Sexual differences in stress-responsive behavior a ...		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Differential Impacts of Acute, Chronic, and Social ...		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Sex matters: how stress at different life stages a ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
mpact of chronic stress on hippocampal microglia a ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No

Title	DOI	Type	Release date	Access level	Repository(ies)	File size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Diferencias sexuales en la neurogénesis hipocampal ...		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
Efecto del estrés temprano en la depresión: Difere ...		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
Sexual differences in depressive-like behaviors af ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Hippocampal neurogenesis changes in a sex and regi ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Female microglia and neurogénesis respond differen ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Desentrañando la depresión inducida por estrés: El ...		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
Efecto del estrés temprano en la depresión. Difere ...		Event	Unspecified	Restricted	None specified		None specified	None specified	No	No
Sexual differences of hipocampal microglía of adul ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Mild juvenile stress increases resilience to the d ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Effects of chronic stress on hippocampal microglia ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
cute psychological stress: effects on hippocampal ...		Publication	Unspecified	Open	None specified		None specified	None specified	No	No
Gut microbiome specific changes in different behav ...		Conference paper	Unspecified	Open	None specified		None specified	None specified	No	No
Microglia as mediators of hipocampal neurogenic im ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Avances en la investigación biomédica y Biotecnoló ...		Event	Unspecified	Open	None specified		None specified	None specified	No	No
Efecto del estrés temprano y adulto en la neurogén ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Social defeat stress induced depression phenotype ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Social defeat stress induced depression phenotype ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Uso de modelos animales para el estudio del estrés ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Estrés y su efecto en la neurogénesis hipocampa		Event	Unspecified	Closed	None specified		None specified	None specified	No	No

Title	DOI	Type	Release date	Access level	Repository(ies)	File size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
Uso de modelos animales para el estudio del estrés ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Uso de modelos animales para el estudio del estrés ...		Event	Unspecified	Closed	None specified		None specified	None specified	No	No
Social avoidance and altered hypothalamic-pituita ...	https://doi.org/10.1016/J.BBR.2023.114681 ...	Journal article	Unspecified	Open	None specified		None specified	None specified	No	No
Unveiling the Secrets of the Stressed Hippocampus: ...	https://doi.org/10.3390/cells12182290 ...	Journal article	Unspecified	Open	None specified		None specified	None specified	No	No
New insights into hypothalamic neurogenesis disrup ...	DOI:10.3389/fnins.2023.1190418 ...	Journal article	Unspecified	Open	None specified		None specified	None specified	No	No