TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 6095**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Farmaceutiche**

Scientist- in – charge: **Lecca Davide**

[Juliana Helena Castro e Silva]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Castro e Silva
Name	Juliana Helena

PRESENT OCCUPATION

Appointment	Structure
Ph.D. Student - Pharmacological Biomolecular Sciences, Experimental and Clinical	Department of Pharmacological and Biomolecular Sciences – University of Milan

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
BS	Pharmacy	Federal University of Bahia	2018
PhD	Pharmacological Biomolecular Sciences, Experimental and Clinical	University of Milan	Ongoing (to be discussed April 2024)
Master	Immunology	Federal University of Bahia	2020

FOREIGN LANGUAGES

Languages	level of knowledge
Portuguese	Native speaker
English	Fluent
Italian	Intermediate
Spanish	Intermediate

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2020	Ph.D. student scholarship from the Department of Pharmacological and Biomolecular Sciences of the University of Milan
2020	Best Scientific Image by Alzheimer's Foundation UK
2018	Master of Philosophy scholarship from the Immunology post-graduate program of Federal University of Bahia
2017	Best poster by an undergraduate student at the IV Symposium of Glial Cell Physiopathology and IX Symposium of Pharmacology of the Federal University of Bahia. 2017.
2017	Undergraduate research fellowship at the Laboratory of Neurochemistry and Cellular Biology of Federal University of Bahia
2016	Undergraduate research fellowship at the Laboratory of Neurochemistry and Cellular Biology of Federal University of Bahia
2015	Undergraduate research fellowship at the Laboratory of Neurochemistry and Cellular Biology of Federal University of Bahia
2014	Undergraduate research fellowship at the Laboratory of Neurochemistry and Cellular Biology of Federal University of Bahia

TRAINING OR RESEARCH ACTIVITY

November 2020 – present | Ph.D. student of Pharmacological biomolecular sciences, experimental and clinical in collaboration with San Raffaele Hospital | Milan, Italy

Currently research focuses on new pharmacological targets to promote remyelination in models of multiple sclerosis and neuroinflammation. At the university (Laboratory of Professor Maria P. Abbracchio), studying the role of oligodendrocytes in neuroinflammation using rat primary oligodendrocytes targeting the receptor GPR17 using both novel and repurposed compounds to promote remyelination in a model of neuroinflammation in vitro. In collaboration with the San Raffaele Hospital (Laboratory of Professors Gianvito Martino and Paola Panina), currently working with oligodendrocyte-enriched brain spheroids derived from human induced pluripotent stem cells using the drug repurposing strategy on the search for pro-remyelinating compounds.

Skills: primary cultures of glial cells, human brain spheroid culture, pharmacological treatments, sample preparation for single-cell RNA sequencing, immunofluorescence, molecular biology (qRT-PCR, Western blot), confocal microscopy, transcriptome analysis and interpretation of results, experimental planning, statistical analysis using softwares (GraphPad Prism), presentation and communication of results. Supervised one undergrad student.

August 2018 – December 2020 | M.Phil. in Immunology at the Federal University of Bahia in collaboration with University of Portsmouth (UK) | Salvador, Brazil

Project focused on the neuroprotective and neurogenic effects of the biflavonoid agathisflavone. In the laboratory of Professor Silvia Lima Costa, worked with primary cerebellar cultures focusing on astrocytic activation after inflammatory damage. In collaboration with the laboratory of Professor Arthur Butt (Portsmouth-UK), worked on the characterization of the neurogenic effect at the subventricular zone and its effects on the glial scar generated by a stab wound in vivo. Supervised one undergrad student.

Thesis title: Effects of agathisflavone on the modulation of reactional gliosis and neurogenesis in vivo. Possible applications of flavonoids for brain diseases of traumatic and viral etiology.

Skills: primary cultures of neural cells, immunofluorescence, confocal microscopy, densitometry, morphology analysis, statistical analysis, data analysis and presentation.

May 2014 – July 2018 | Undergraduate research fellow at the Federal University of Bahia | Salvador, Brazil

Awarded with undergrad research fellowship for 4 consecutive years. Developed different projects focusing on the effects of natural compounds in models of neuroinflammatory degenerative diseases. The research focused on cell survival, neuroinflammatory and autophagic pathways of glial cells treated with phytochemicals. Thesis title: Study of signaling pathways modulated by Amburana cearensis seed stracts in hippocampla organotypic slices after glutamatergic excitotoxicity.

Activities: cell line culture, organotypic cultures, behavioral tests in rats, pharmacological treatments, experimental planning, western blot, plant extracts, data analysis and scientific writing and presentation of results.

PROJECT ACTIVITY

Year	Project
2020-present	Department of Pharmacological and Biomolecular Sciences of the University of Milan (Italy): Identification of new pharmacological targets to promote remyelination in models of multiple sclerosis
2018-2020	CAPES Foundation (Brazil): Investigation of molecular mechanisms of agathisflavone myelinating and immunomodulating activity
2017-2018	National Council for Scientific and Technological Development (Brazil): Investigations of the neuroprotective effects of the flavonoid apigenin against behavioral changes and neuroinflammatory response induced by aminochrome in an in vivo model of Parkinson's disease
2016-2017	Federal University of Bahia (Brazil): Extraction and purification of major alkaloids from Prosopis juliflora
2015-2016	Foundation for Support of Research of Bahia (Brazil): Characterization of alkaloids from Prosopis juliflora as a toxin that induces Alzheimer's disease characteristic cellular malfunctions
2014-2015	Foundation for Support of Research of Bahia (Brazil): Prospecting the cytotoxic action of synthetically derived alkaloids molecules in neural phenotype cell lines

CONGRESSES AND SEMINARS

Date	Title	Place
8-10 July 2023	XVI European Meeting on Glial Cells in Health and Disease, Berlin – Germany, 2023	Berlin - Germany

15-17 December 2022	More than Neurons III Edition	Turin - Italy
5-9 July 2021	XV European Meeting on Glial Cells in Health and Disease	Porto - Portugal
10-12 Semptember 2018	I North and Northeast Symposium of Immunology	Salvador - Brazil
15-17 July 2018	XIV Regional Meeting of The Brazilian Biochemistry Society	Salvador – Brazil
17-20 April 2017	IV Symposium of Glial Cell Physiopathology and IX Symposium of Pharmacology of Federal University of Bahia	Salvador - Brazil

PUBLICATIONS

Articles in reviews

1. Ferreira RS, Ribeiro PR, Castro e Silva JH, Hoppe JB, de Almeida MMA, de Lima Ferreira BC, Andrade GB, de Souza SB, Ferdandez LG, de Fátima Dias Costa M, Salbego CG, Rivera AD, Longoni A, de Assis AM, Pieropan F, Moreira JCF, Costa SL, Butt AM, da Silva VDA. Amburana cearensis seed extract stimulates astrocyte glutamate homeostatic mechanisms in hippocampal brain slices and protects oligodendrocytes against ischemia. BMC Complement Med Ther. 2023 May 11;23(1):154. doi: 10.1186/s12906-023-03959-0. PMID: 37170258; PMCID: PMC10173544.
2. Marangon D, Castro E Silva JH, Lecca D. Neuronal and Glial Communication via Non-Coding RNAs: Messages in Extracellular Vesicles. Int J Mol Sci. 2022 Dec 28;24(1):470. doi: 10.3390/ijms24010470. PMID: 36613914; PMCID: PMC9820657.
3. Castro E Silva JH, Souza JT, Schitine C, Júnior AFS, Bastos EMS, Costa SL. Pharmacological Potential of Flavonoids against Neurotropic Viruses. Pharmaceuticals (Basel). 2022 Sep 15;15(9):1149. doi: 10.3390/ph15091149. PMID: 36145370; PMCID: PMC9502241.
4. Ferreira RS, Teles-Souza J, Dos Santos Souza C, Pereira ÉPL, de Araújo FM, da Silva AB, Castro E Silva JH, Nonose Y, Núñez-Figueredo Y, de Assis AM, Souza DO, Costa MFD, Moreira JCF, Costa SL, da Silva VDA. Rutin improves glutamate uptake and inhibits glutamate excitotoxicity in rat brain slices. Mol Biol Rep. 2021 Feb;48(2):1475-1483. doi: 10.1007/s11033-021-06145-y. Epub 2021 Jan 25. PMID: 33492574.
5. Castro e Silva JH, Ferreira RS, Pereira EP, Braga-de-Souza S, Almeida MMA, Santos CCD, Butt AM, Caiazzo E, Capasso R, Silva VDAD, Costa SL. *Amburana cearensis*: Pharmacological and Neuroprotective Effects of Its Compounds. Molecules. 2020 Jul 27;25(15):3394. doi: 10.3390/molecules25153394. PMID: 32726999; PMCID: PMC7435960.
6. da Silva VDA, da Silva AMM, Castro E Silva JH, Costa SL. Neurotoxicity of Prosopis juliflora: from Natural Poisoning to Mechanism of Action of Its Piperidine Alkaloids. Neurotox Res. 2018 Nov;34(4):878-888. doi: 10.1007/s12640-017-9862-2. Epub 2018 Jan 16. PMID: 29340871.
7. de Araújo FM, Ferreira RS, Souza CS, Dos Santos CC, Rodrigues TLRS, Castro E Silva JH, Gasparotto J, Gelain DP, El-Bachá RS, D Costa MF, Fonseca JCM, Segura-Aguilar J, Costa SL, Silva VDA. Aminochrome decreases NGF, GDNF and induces neuroinflammation in organotypic midbrain slice cultures. Neurotoxicology. 2018 May;66:98-106. doi: 10.1016/j.neuro.2018.03.009. Epub 2018 Mar 26. PMID: 29588162.
8. Santos CC, Araújo FM, Ferreira RS, Silva VB, Castro e Silva JH, Grangeiro MS, Soares ÉN, Pereira

ÉPL, Souza CS, Costa SL, Segura-Aguilar J, Silva VDA. Aminochrome induces microglia and astrocyte activation. Toxicol In Vitro. 2017 Aug;42:54-60. doi: 10.1016/j.tiv.2017.04.004. Epub 2017 Apr 6. PMID: 28392416.

9. Silva VDA, Cuevas C, Muñoz P, Villa M, Ahumada-Castro U, Huenchuguala S, Santos CCD, Araujo FM, Ferreira RS, Silva VBD, Castro e Silva JH, Soares ÉN, Velozo ES, Segura-Aguilar J, Costa SL. Autophagy protects against neural cell death induced by piperidine alkaloids present in Prosopis juliflora (Mesquite). An Acad Bras Cienc. 2017 Jan-Mar;89(1):247-261. doi: 10.1590/0001-3765201720160477. PMID: 28423083.

Congress proceedings

Targeting the GPR17 receptor to counteract oligodendrocyte maturation failure during inflammation. Castro e Silva JC, Boccazzi M, Marangon D, Papotto C, Dellanoce C, Lecca D, Abbracchio MPA. XVI European Meeting on Glial Cells in Health and Disease. July 2023, Berlin – Germany.

The anti-asthmatic drug montelukast promotes oligodendrocyte maturation in a model of neuroinflammation in vitro. Castro e Silva JH, Boccazzi M., Peri C, Panina -Bordignon P, Murtaj V, Marangon D, Lecca D, Martino G, Abbracchio MP. More than Neurons III Edition, December 2022, Turin – Italy.

Study of neuroprotective effects of Dichloromethane extract from Amburana cearensis seeds and involvement of AKT signaling pathway. Castro e Silva J. H., Ferreira R. S., Hoppe J. B., Salbego C. G., Pereira E. P. L.1, Ribeiro P. R., Fernandez L. G., Moreira J. C.F., Costa S. L., Silva, V. D. A. XIV Regional Meeting of The Brazilian Biochemistry Society. July 2018, Salvador – Brazil.

Alkaloids extracted from Prosopis juliflora (Algaroba) induce autophagy in neural cell to protect against programmed cell death. Silva VDA., Castro e Silva JH, Cuevas C, Muñoz P, Villa M, Ahumada-Castro U, dos Santos CC, de Araújo FM, Ferreira RS, da Silva VB, Soares ÉN, Velozo E, Segura-Aguilar J, Costa SL. IV Symposium of Glial Cell Physiopathology and IX Symposium of Pharmacology of Federal University of Bahia. April 2017, Salvador – Brazil.

OTHER INFORMATION

CONGRESS ORGANIZATION

1. IV Symposium of Glial Cell Physiopathology and IX Symposium of Pharmacology of UFBA. 2017. Salvador – Brazil.
2. XXXIV Pharmacy Week of the Federal University of Bahia. 2015. Salvador – Brazil.

COURSES

1. Provider Biomedia: Legislazione Nazionale, Etica, benessere degli animali e Tre R (Modulu 1 e 2)
2. Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna: Biologia E Gestione Degli Animali Da Laboratorio (Moduli 3.1, 4, 5, 6.1, 7. Roditori E Lagomorfi)

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: Milan, 03/01/2024