TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 6398**

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 Farmacologiche e Biomolecolari**

Scientist- in – charge: Dr. Riccardo Maria Cristofani

Rocío Fernanda Magdalena Parra

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Magdalena Parra
Name	Rocío Fernanda

PRESENT OCCUPATION

Appointment	Structure
PhD student	University of Concepción

EDUCATION AND TRAINING

Degree	Course of studies	University	Year of achievement of the degree
Master	Biochemistry (6 YEARS)	University of Concepción	2019
PhD	PhD in Biological Sciences, Cell al Moleclar Biology program	University of Concepción	APRIL 2024
Other	Curricular, evaluative and didactic bases of the teaching and learning process of science and mathematics	University of Concepción	2022
Other	Training capacities for the exchange of knowledge with the National Congress	Pontifical Catholic University of Chile	2022

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
Mar-Jun. 2022	University of Concepción	Concepción, Chile
Aug-Dec. 2018	University San Sebastián	Concepción, Chile
Mar-Dec. 2018	Department of Cell Biology, Faculty of Biological Sciences, University of Concepción	Concepción, Chile
Jan. 2018	Center for the Investigation of Advanced Polymers (CIPA)	Concepción, Chile
Dec. 2017	EMSA Clinical Laboratory	Concepción, Chile

FOREIGN LANGUAGES

Languages	level of knowledge
Spanish	Mother tongue
English	Advanced

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2023	National Doctorate Scholarship COVID extension, ANID. Chile.
2023	National Doctorate Scholarship extension for thesis writing, ANID. Chile.
2023	ISN-ESN Meeting Travel Award, International Society for Neuroscience, Portugal.
2023	3rd place "Best Image in Cell Biology" prize. Chilean Society for Cell Biology. Puerto Varas, Chile.
2022	Complementary Benefits, National Doctorate Scholarship, ANID. Chile.
2022	4th ISN-JNC Flagship School Travel Award, International Society for Neuroscience-Journal of Neuroscience. Germany.
2021	Complementary Benefits, National Doctorate Scholarship, ANID. Chile.
2019	National Doctorate Scholarship, National Agency for Investigation and Development (ANID). Chile.
2018	"University of Concepción" award, best student 2017 promotion, University of Concepción. Concepción, Chile.
2018	Best student 2017 promotion, Faculty of Pharmacy, University of Concepción. Concepción, Chile.
2013	Academic excellence scholarship, Huachipato Siderurgy Company. Concepción, Chile

TRAINING OR RESEARCH ACTIVITY

Current research activity: Vitamin C is an essential micronutrient with 2 chemical forms, ascorbic acid (AA), its reduced form, and dehydroascorbic acid (DHA), its oxidized form. Physiologically, vitamin C is mainly found as AA, which mainly acts as an antioxidant agent in the central nervous system, and its homeostasis is maintained through its recycling between neurons and astrocytes. However, physiopathological conditions that induce high oxidative stress levels may induce the generation of extracellular DHA and its accumulation inside cells, which has been previously associated with changes in neuronal metabolism, loss of neurites and necroptotic cell death, characterized by the activation of RIPK1. Moreover, RIPK1 activation has been associated with amyotrophic lateral sclerosis (ALS), pathology characterized by motor neuron degeneration and and oxidant evironment. Under this context, our work is focused on discovering the relationship between DHA, RIPK1 activation and neurite loss in a pathological context such as ALS.
1. Experience in molecular biology techniques: RNA extraction, Polymerase Chain Reaction (PCR), reverse transcriptase-PCR (RT-PCR), quantitative PCR (qPCR), gel electrophoresis, Western Blot.
2. Experience in cell biology techniques: immortalized cell culture care, amplification, thawing and freezing thechniques, cell viability analysis. Experience in primary cell culture and neurosphere formation.
3. Experience in morphological analysis of cells and tissues: immunocytochemistry and immunohistochemistry with 4 fluorophores and confocal microscopy and superresolution analysis.
4. Experience in neurite growth analysis: IncuCyte use and data processing and analysis.

5. Work and management of murine models: Work on Sprague Dawley rats and SOD1 G93A and WT mice. Experience in care, genotipification and quantification of number of gene copies. Experience in sedation, anesthesia, intracardial perfusion and fixation, tissue isolation and intracerevroventricular injection of drugs.
6. Experience in tissue processing: fixation, microtome sectioning, immunofluorescence analysis using confocal microscopy.
7. Experience in uptake analysis using radioactive elements (^{14}C).
8. Experience in care and management of induced pluripotent stem cells (iPSCs) derived from amyotrophic lateral slcerosis patients and iPSC-derived AF22 cell line, with neuroepithelium characteristics.
9. Experience in motor neuron differentiation and maturation from the aforementioned cells.
10. Experience in image processing and quantification using Zen and ImageJ softwares.
11. Experience in data processing using GraphPad Prism software.

PROJECT ACTIVITY

Year	Project
2022-Current	"Oxidized vitamin C, an activator of motor neuron neurites degeneration and cell death in Amyotrophic Lateral Sclerosis". Principal Investigator: Dr. Francisco Nualart Santander. Chile.
2022	"Implementation of active learning strategies for first-year health students". Principal Investigator: Dr. Fernando Martínez Acuña. Chile.
2018-2022	"Vitamin C recycling: Functional effects in neuronal differentiation and necroptosis induction". Principal investigator: Dr. Francisco Nualart Santander. Chile.

CONGRESSES AND SEMINARS

Date	Title	Place
2023	**Magdalena, R.**, Ferrada, L., Nualart, F. "Dehydroascorbic acid accumulation affects neurite length, which is partially prevented by RIPK1 inhibition" (Poster)	ISN-ESN Meeting. Porto, Portugal.
2023	**Magdalena, R.**, Ferrada, L., Salazar, K., Smith-Ghigliotto, J., Cristofani, R., Poletti, A., Osorio, M., Tapia, JC., Carrasco, M., Nualart, F. "Loss of vitamin C recycling accumulation negatively affects neurites in normal and ALS hiPSC-derived neurons" (Oral presentation)	Chilean Society for Cell Biology XXXV Annual Meeting (SBCCH). Puerto Varas, Chile.
2022	**Magdalena, R.**, Salazar, K., Espinoza, F., Ramírez, E., Saldivia, N., Nualart, F. "Cortical neuron differentiation increases with ascorbic acid uptake and depends on vitamin C recycling between neurons and astrocytes" (Poster)	4th ISN-JNC Flagship School. Schmerlenbach, Germany.
2022	**Magdalena, R.**, Ferrada, L., Nualart, F. "Dehydroascorbic acid accumulation affects neurite length, which is partially prevented by RIPK1 inhibition" (Poster)	Chilean Society for Cell Biology XXXIV Annual Meeting (SBCCH). Puerto Varas, Chile.

2019	Espinoza, F., **Magdalena, R.**, Martínez, F., Salazar, K., Ávila, F., Lerchundi, R., Rose, CR., Nualart, F. "Vitamin C recycling regulates neurite growth through an oxidative effect in neurospheres *in vitro*"	Chilean Society for Cell Biology XXXIII Annual Meeting (SBCCH). Puerto Varas, Chile.
2018	Espinoza, F., **Magdalena, R.**, Martínez, F., Salazar, K., Nualart, F. "Effect of vitamin C recycling during neurospheres differentiation *in vitro*" (Poster)	FENS Forum of Neuroscience, Berlin, Germany.
2018	**Magdalena, R.**, Espinoza, F., Salazar, K., Nualart, F. "The accumulation of intracellular dehydroascorbic acid affects neuritic growth" (Poster)	Chilean Society for Cell Biology XXXII Annual Meeting (SBCCH). Puerto Varas, Chile.
2017	**Magdalena, R.**, Espinoza, F., Salazar, K., Nualart, F. "Effect of ascorbic acid on the expression and distribution of vitamin C transporters in neural stem cells and neuroblasts" (Poster)	Chilean Society for Cell Biology XXXI Annual Meeting (SBCCH). Puerto Varas, Chile.
2017	Espinoza, F., **Magdalena, R.**, Martínez, F., Salazar, K., Nualart, F. "Role of vitamin C recycling during neurite formation in neurospheres differentiated *in* vitro" (Poster)	Chilean Society for Cell Biology XXXI Annual Meeting (SBCCH). Puerto Varas, Chile.
2017	Espinoza, F., **Magdalena, R.**, Salazar, K., Martínez, F., Nualart, F. "Compared analysis of vitamin C and vitamin A in stimulation of neurite growth on neural progenitors" (Poster)	Annual Meeting of Society for Neuroscience (SFN). Washington DC, USA.

PUBLICATIONS

Articles in reviews
Ferrada, L., **Magdalena, R.**, Barahona, MJ., Ramírez, E., Sansana, C., Gutiérrez, J., Nualart, F. (2021) Two distinct faces of vitamin C: AA vs DHA. Antioxidants 10:215.
Salazar, K., Espinoza, F., Cerda-Gallardo, G., Ferrada, L., **Magdalena, R.**, Ramírez, E., Ulloa, V., Saldivia, N., Troncoso, N., Oviedo, MJ., Barahona, MJ., Martínez, F., Nualart, F. (2021) SVCT2 overexpression and ascorbic acid uptake increase cortical neuron differentiation, which is dependent on vitamin C recycling between neurons and astrocytes. Antioxidants 10(9):1413.
Espinoza, F., **Magdalena, R.**, Saldivia, N., Jara, N., Martínez, F., Ferrada, L., Salazar, K., Ávila, F., Nualart, F. (2020) Vitamin C recycling regulates neurite growth in neurospheres differentiated in vitro. Antioxidants 9(12):1276.
Ulloa, V., Saldivia, N., Ferrada, L., Salazar, K., Martínez, F., Silva-Álvarez, C., **Magdalena, R.**, Oviedo, MJ., Montecinos, H., Torres-Vergara, P., Cifuentes, M., Nualart, F. (2019) "Basal sodium-dependent vitamin C transporter 2 polarization in choroid plexus explant cells in normal or scorbutic conditions". Sci Rep 9(1):14422.

OTHER INFORMATION

Jan-Mar. 2023: Internship at Laboratory of Experimental Biology, University of Milan. Milan, Italy.
Sep 25th-Oct 2nd 2022: Attendance to the 4th ISN-JNC Flagship School "Brain Metabolism in Health and Disease", Schmerlenbach, Germany.

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.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Concepción, Chile, February 11th, 2024.

Università degli Studi di Milano – Direzione Trattamenti Economici e Lavoro Autonomo
Ufficio Contratti di formazione e Ricerca
Via Sant'Antonio 12 - 20122 Milano, Italia
assegni.ricerca@unimi.it DTELA_M_CVAssegniENG_rev. 00 del 02/09/2021