Emma Merlin

PERSONAL DETAILS

Date of birth: 05/11/1997
Nationality: Italian
Gender: Female
Type B licence

CONTACTS

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CURRENTLY

Neuroscience Ph.D. student

Department of Veterinary Sciences – Largo Paolo Braccini, 2 – 10095 Grugliasco (TO), Italy
Research project: *"Inhibitory neurons in pain pathways: recruitment and function in physiological and pathological conditions"*

Pain is perceived by the integration and processing of sensory stimuli conveyed to the different areas of the central nervous system through nociceptive pathways. My Ph.D. project aims to analyze the involvement and activation of inhibitory neurons in the spinal dorsal horn and somatosensory cortex using a model of inflammatory pain induced by zymosan injection in the hind paw of both normal and diabetic mice. To conduct this analysis, immunohistochemical approaches, and functional studies will be carried out to evaluate activation in inhibitory neurons and to identify the specific circuits involved. Behavioral tests will also be associated to assess the level of noxious sensitivity. The results obtained will improve the knowledge of the role of inhibitory neurons leading to a better understanding of how the perception of pain is regulated and modulated at the spinal and supraspinal levels, which is fundamental for the development of more effective treatments.

EDUCATION

Ph.D. – Neuroscience –XXXVIII cycle – University of Turin – Department of Veterinary Sciences – 2022/Ongoing
Master's Degree in Cellular and Molecular Biology – Curriculum Neurobiology – LM-6 – University of Turin – Department of Life Science and System Biology – 110/110 – 2019/2021
Bachelor's Degree in Biological Sciences – Biological-Molecular Curriculum – L-13 – University of Turin – Department of Life Science and System Biology – 97/110 – 2016/2019
Scientific high school diploma – IIS Aldo Moro Rivarolo Canavese (To, Italy) – 84/100 – 2011/2016

WORK EXPERIENCE

Ph.D. – November 2022/Ongoing
Department of Veterinary Sciences (10095 Grugliasco TO), Prof. Francesco Maria Ferrini
Research area: spinal and central nociceptive pathways.
Research model: mouse.

Research project: *"Inhibitory neurons in pain pathways: recruitment and function in physiological and pathological conditions"*

Research fellowship – April 2022/October 2022

Department of Veterinary Sciences (10095 Grugliasco TO), Prof.ssa Chiara Salio

Research area: spinal and central nociceptive pathways.

Research model: mouse.

Research project: *"Mechanical sensitivity alterations due to diabetic neuropathy"*

Acquired skills:

- Von Frey test;
- Brain, dorsal root ganglia, spinal cord, skin tissue sampling, and preparation;
- Vibratome, microtome, cryostat sectioning;
- Immunofluorescence reactions;
- Confocal microscope (Leica TCS SP8 – LasX);
- Statistical analysis and data processing (Excel, ImageJ, GraphPad 9).

Teacher – December 2021/April 2022

Istituto Comprensivo di Volpiano (10088 Volpiano TO)

Kindergarten and primary school teacher. Role: support, generic replaces, maths and science.

Training internship – April 2021/ October 2021

Department of Veterinary Sciences (10095 Grugliasco TO), Prof. Francesco Maria Ferrini

Research area: spinal and central nociceptive pathways.

Research model: mouse.

Research project: *"Recruitment of spinal inhibitory neurons in inflammatory pain"*

Acquired skills:

- Brain, spinal cord tissue sampling and preparation;
- Vibratome, microtome, cryostat sectioning;
- Immunofluorescence reactions;
- Confocal microscope (Leica TCS SP8 – LasX);
- Statistical analysis and data processing (Excel, ImageJ, GraphPad 9).

Training internship – September 2018/ December 2019

Neuroscience Institute Cavalieri Ottolenghi (10043 Orbassano TO), Laboratory of Neurophysiopathologies, Prof. Filippo Tempia

Collaboration in the in-progress research projects. Acquired skills:

- Cryostat sectioning;
- PCR;
- Learned to work with, and handle the animal model (mouse) and performed behavioral tests (beam test).

Saleswoman – 2018

"Sottozero" ice cream parlor (10040 Leinì TO)

Training internship – 2015

Studio Chiono & Associati S.r.l. (10086 Rivarolo Canavese TO)

Assisting laboratory technicians in taking and analyzing chemical and microbiological samples.

Social media and website manager – 2015/2020

Tribeca Chivasso (10034 Chivasso TO)

Private lessons – 2013/Ongoing

Tutoring, homework help, tutoring for 1st and 2nd-grade secondary school students in scientific subjects (biology, chemistry, physics, mathematics), Latin, and English.

CERTIFICATES ACHIEVED DURING LABORATORY TRAINING

Basic elements for the researchers' approach to the use of animals for scientific purposes – IZSLER – 2022

Animal Facility Certification – Neuroscience Institute Cavalieri Ottolenghi – 2019

OTHER CERTIFICATIONS

Qualification to exercise the Profession of Biologist – 2023

Certification 24 CFU (Teaching credits) – 2021

FCE Certification (B2) – 2015

ECDL Certification – 2015

SKILLS

Precise, autonomous, and reliable.

Organized, dedicated to the study and observation of facts, and good problem-solving skills.

Proactive, helpful, collaborative, and confrontational attitude in relationships.

Excellent use of Microsoft and image and video editing programs.