

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

Nome **VILLA MICHELA**
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Nationality Italian
Date of birth 03/23/1996

WORK EXPERIENCE

2022-on going

Junior fellowship in Stem Cell Biology and Pharmacology of Neurodegenerative Disease, Bioscience department of the University of Milan.

Since February I work in Stem Cell Biology and Pharmacology of Neurodegenerative Disease Laboratory led by Prof. Elena Cattaneo. This laboratory focuses its efforts on the study of Huntington's Disease -HD-, a progressive neurodegenerative disorder which onsets during adulthood, between fourth and fifth decade of life. My contribute to this laboratory concerns to demonstrate that HD should be considered a pathology with a neurodevelopmental component, although the clinical symptoms arise in adult life. To reach this goal I have been performing both in vitro and in vivo experiments to uncover early impairments during striatal differentiation or embryonic development, respectively.

2021-2022

Fellowship at Mario Negri Pharmacological Research Institute.

From September 2021 to February 2022, I worked in Annamaria Vezzani's laboratory at Mario Negri Institute. The research scope of this laboratory is to uncover epilepsy biomarker employing rodent models, both rats and mice, subjected at several types of brain insults. My aim in this laboratory was to identify blood, cerebral structure (MRI) and electroencephalogram biomarkers that could allow us to discriminate between animals which would or would not develop the pathology.

EDUCATION AND TRAINING

2018-2021

University of Milan, master's degree in Biology Applied to Biomedical Research.

Firstly, this formative path gave me the theoretical knowledges underlie research in several biomedical fields, included molecular biology, physiology, neurophysiology and pharmacology. This course provides a year of experimental internship in a laboratory of the University of Milan in order to learn the scientific method underlying research.

I performed my internship in Stem Cell Biology and Pharmacology of Neurodegenerative Disease Laboratory led by Prof. Elena Cattaneo, at Department of Bioscience of the University of Milan. With my supervisor Prof. Chiara Zuccato I evaluated the role of ADAM10, a metalloprotease of ADAMs family, in synaptic dysfunctions of Huntington's Disease, a neurodegenerative disorder characterized by loss of striatal and cortical neurons followed by cognitive and motor deficits.

During the academic year 2019-2020 I won the University scholarship.

Master's degree vote: 110/110 cum laude

2015-2018

University of Milan, three-year degree course in Biological Science

During this degree course I followed biology courses such as cytology and histology, pharmacology, immunology, math, statistic, physiology, chemistry, botany and plant physiology.

During the academic year 2017-2018 I won the University scholarship.

Three-year degree vote: 110/110 cum laude

2010-2015

Lorenzo Mascheroni's Scientific High School, Bergamo

Vote: 83/100

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

ITALIAN

OTHER LANGUAGES

- reading skills
- Writing skills
- Verbal skills

ENGLISH

GOOD, B2

GOOD, B2

GOOD, B2

SOCIAL SKILLS AND COMPETENCES

During High School years I learned to perform team works refining my collaborative abilities. Moreover, I played volleyball for six years. In this sport it is fundamental communicate between teammates.

During the University internship I improved my interpersonal skills interacting with laboratory staff with who I was able to discuss scientific articles and technical aspects of experiments. Furthermore, I was able to participate at laboratory meeting with both colleagues and external collaborators.

ORGANIZATION SKILLS AND COMPETENCES

During the internship year I learned to apply the scientific method and to plan several experiments to perform within specific deadline. I learned to fill in lab book periodically, to organize and to archive experiments and results. I learned to analyse the results and to discuss them with my colleagues.

TECHNICAL SKILLS AND COMPETENCES

During internship I have learned several experimental techniques:

- DNA extraction from biopsy of Huntington Disease mouse models
- PCR to genotyping Huntington's Disease mouse models
- RNA extraction from tissue and quantification by nanodrop
- Electrophoresis on agarose gel
- Reverse transcription and Real Time-PCR
- Preparation of total protein lysates, synaptosome, pre- and post-synaptic fractions
- Immunoprecipitation
- SDS-PAGE and Western Blot
- ELISA
- Maintenance of murine embryonic stem cell cultures
- Immunofluorescence on mouse coronal slices

During Mario Negri Institute fellow scholarship I have learned several techniques:

- Rat handling
- Collection of biological samples from rats
- Venous blood sampling from rat tail and plasma isolation from blood sample
- Brain isolation from rodent models and tissues preparation
- Immunohistochemical techniques
- EEG tracks analyses

During the Junior fellowship in Stem Cell Biology and Pharmacology of Neurodegenerative Disease actually ongoing I have learned several techniques:

- Maintenance of human HD and control embryonic stem cell
- Striatal differentiation of human HD and control embryonic stem cell
- Freeze and thaw of human embryonic stem cell
- Immunocytochemistry
- Chromatin immunoprecipitation, library preparation and sequencing
- Mouse handling

Intraperitoneal injection in mouse
Mouse dislocation and embryo's isolation
Perfusion and brain isolation
Isolation of brain areas such as striatum, hippocampus and cortex
Brain inclusion in OCT and cryostat cut
Immunofluorescence on embryonic slices

COURSES

During the internship I participated to the following online courses:

Covid-19: how to chase and defeat a virus
The Science public perception: junior researcher in front of scientific theme of big public, politic and media interest
Generic training for microscopy (Widefield and Confocal Sp5 microscopies)

During the Mario Negri Institute fellowship, I participated to the following course:

Introductory course to animal experimentation

During the Junior fellowship in Stem Cell Biology and Pharmacology of Neurodegenerative Disease actually ongoing I participated to the following course:

Introductory course to animal experimentation
Animal Experimentation: Module 3.2 "Appropriate species-specific basic biology" (practice)
Animal experimentation: Module 6.2 "Humanitarian methods of suppression" (skills)
Nature's masterclass: Scientific Writing and Publishing

CONFERENCES

During the Junior fellowship in Stem Cell Biology and Pharmacology of Neurodegenerative Disease actually ongoing, I participated to:

"Episystem: stem cell epigenetics international conference"

POSTERS

DECIPHERING EPIGENETICS ROLE IN HUNTINGTON DISEASE CELL LINES

Conforti P., Nuocera M.R., Brocchetti S., Di Patrizio S. E., **Villa M.**, Birolini G., Antonelli L., Gregoretti F., Oliva G., Federica L., Ghilotti M., Lanzuolo C., Cattaneo E.
"Episystem: stem cell epigenetics international conference", Milan, July 4-6, 2022

ADAM10 IN HUNTINGTON'S DISEASE SYNAPTIC DEFECTS

Vezzoli E., Scolz A., **Villa M.**, Cattaneo E., Zuccato C.
"EHDN2022 Plenary Meeting", *abstract accepted*, Bologna, September 16-18, 2022

ha formattato: Inglese (Regno Unito)