RESEARCH TRAINING PROGRAM

I. General Information

Title of the research project:
The role of biomarkers in Major Depressive Disorder: diagnostic and therapeutic implications.

Name and address of the department:
Department of Medicine and Surgery, Division of Psychiatry, University of Insubria, Viale Borri, 57 – 21100 Varese, Italy.

Student's supervisor:
Camilla Callegari

II. Description of the project

(max 1500 characters, spaces included)

Background
Major Depressive Disorder (MDD), with a life-time prevalence of 15%, affects over 320 million people worldwide. Currently, the diagnosis of MDD is mainly based on clinical examination and subjective evaluation of depressive symptoms; so far, in fact, no biomarkers have been approved as part of the diagnostic criteria for depression. One of the main reasons seems to be related to the complexity and heterogeneity of the depressive disorder. It is likely that alterations affecting different systems, interacting with each other, are the basis of the pathogenesis of MDD in which neuroprogressive mechanisms and multiple and complex interactions between the nervous, endocrine and immune systems seem to be involved, as well as interactions between genetic and environmental factors.

What is the aim of the project?
To evaluate the existence of a possible correlation between clinical and inflammatory, endocrine, metabolic and genetic markers, in order to achieve a deeper understanding and characterization of MDD, and to identify a panel of clinical and biological markers that allows non-responders to be identified in advance in order to validate a tool that can guide the clinician in choosing an optimal drug treatment.

What techniques and methods are used?
Clinical and laboratory assessment of patient diagnosed with MDD according to DSM-5 criteria, immunophenotyping of peripheral blood, DNA extractions and genotyping by Real Time PCR.

When did the department start working on this project? (year)
2020

Type of research project:
☐ Basic science   ☐ Clinical research without lab work   ☑ Clinical research with lab work

III. Student's involvement

The student will mainly observe   ☐ YES ☑ NO

The student will observe the experiments but will be involved in data analysis   ☐ YES ☑ NO

The student will take active part in experiments ("lab work")   ☑ YES ☐ NO

The student will take active part in clinical examination (clinical research)   ☑ YES ☐ NO

The student will be allowed to work with patients   ☑ YES ☐ NO

What are the tasks expected to be accomplished by the student?
(max 500 characters, spaces included)

What is expected from/what will be the general outcome of the student?
☑ To prepare a poster / presentation / scientific report / abstract

☑ The student's name will be mentioned in a future publication

☐ Opportunity to present together with the supervisor the results on a conference
☐ No specific outcome is expected

IV. Requirements

What skills are required from the student?
(max 500 characters, spaces included)

Is there any special knowledge or a certain level of studies needed?
☑ Subjects passed:
Psychiatry (required), Pharmacology (required)

☐ Previous experience with:
_____

☐ Certificate of:
_____

☐ None

Are there any legal limitatons in the student's involvement in the project? ☐ YES ☑ NO

If yes, what are the limitations?

_____

For the use of students considering participating in the project, further information can be found from the following references:
(please add specific references, max 3)

V. Schedule

Duration of the project:
☑ 1 month   ☑ 2 months   ☑ 3 months

There are approximately 5 hours of work per day.

Available months:
☑ January ☑ February ☑ March ☑ April ☑ May ☑ June ☑ July ☑ August ☑ September
☑ October ☑ November ☑ December

How many students can you accept to the project at the same time? 1
Special remarks:
Students should bring a white coat. Vaccination against tetanus and HCV are strongly recommended.

NOTE: a scientific report is required at the end of the program