



vWISE Visiting Agreement (Annex 3)

Intermediate activity report

WP Number : **WP1**

WP Title : **Vine adaptation to climate changes**

Beneficiary/partner : **UNCUYO/ICVV-CSIC**

WP leader : **UNITO**

Visiting Researcher:

Name: **Diego Lijavetzky**

Position: **Research Scientist**

Home Institution, country: **IBAM (UNCUYO-CONICET), Argentina**

Host Institution : **ICVV-CSIC**

Scientific contact person at the institution: **José Miguel Martínez Zapater**

Mobility period: **from 28/03/2021 to 30/07/2021**

General progress of the project

Based on the research mobility project, please indicate if the project:

Has fully achieved its objectives and technical goals for the period;

Project achievement

- Scientific highlights and research achievements/outputs

During this first secondment we performed the following analysis:

- a) Biochemical, phenological and productive data corresponding to two consecutive seasons for 27 Malbec clones were compared and analyzed to assess the phenotypic differences between the clones. That allowed identifying six clones (two groups of three clones) showing contrasted behavior for traits related to climate change adaptation. Additionally,

the RNA samples corresponding to those six clones were sent to Novogene sequencing facility and the results are being analyzed.

- b) Genetic polymorphism data obtained after the NGS re-sequencing of four Malbec clones were used to construct a robust set of 48 SNP markers. By means of these markers we evaluated the natural genetic variation between a sample of more than 200 different Malbec clones. Most of the polymorphism analysis were finished before the starting of the secondment, but we used the generated information to evaluate a new experiment comprising a larger set of Malbec clones. The new set will include samples from different countries and continents. As well as from a wider selection within Argentina.

- Transfer of knowledge and Training activities:

During these four months I was training Noelia Alañon (PhD student of the group) in RNA-seq analysis. Particularly in a bioinformatic pipeline that allows the analysis of differentially expressed genes and lncRNAs.

- Dissemination of results:

After discussing the results of different ongoing projects, we prepared and submitted two abstracts to two different international meeting: XVIII Latin American Congress of Genetics at Chile and the 11th International Symposium on Grapevine Physiology and Biotechnology ISGPB2021 at South Africa.

- Qualitative indicators of progress and success in line with workplan and milestones (description of progress towards the milestones and deliverables)

During this four month we were able to:

- a) identify a set of Malbec clones showing contrasted phenotypic characteristics for climate change adaptation traits (cycle length, colour, acidity, potential alcohol (°Bx). Start RNA-seq analysis.
- b) identify a set genetically divergent clonal accessions, putatively associated to the time span of clonal propagation in Argentina and Europe.
- c) Different results of the common work produced between ICVV and IBAM is being presented to international research meeting