

Position Offered: POSTDOCTORAL RESEARCHER

Project: *PreDesPlant: Early and real-time detection of stress associated damage in plants using integrated digital sensors.*

Technological and scientific fields: Digital tools for agriculture

Location: Paterna. Comunidad Valenciana. I2SysBio: <http://i2sysbio.uv.es/>

Research Group/PI: Non-coding RNA-mediated Regulatory Networks. PI: Dr. Gustavo G. Gómez Hoc. ncRNALab: <https://www.ncrnalab.com/>

PROJECT SUMMARY

Objective: "To develop a novel, autonomous and integrative technology based on the use of plant biohybrids (plant + biosensors) driven by AI that will act as plant-human translators to report the physiological health status of a crop in real time". To meet this general objective, the following specific objectives have been set: 1- To develop an RNA recognition system that can be adapted to electrochemical sensors. 2- To validate the efficiency of: i) the analyte (RNA)-receptor (probe) interactions and ii) the fluidic capabilities of the detection system by image analysis at macroscopic and microscopic levels. 3- To adapt the sensitivity of this detection system to the accumulation levels of stress marker RNAs in plant fluids. 4- Identify new RNAs to increase the specificity and efficacy of these devices in multiple agricultural species. 5- To develop an AI-assisted system that allows remote and real-time analysis of the signals emitted by the sensor in order to determine the physiological and phytosanitary status of crops.

PROFESSIONAL PROFILE

Minimum requirements:

Academic qualification: PhD in Agricultural Engineering/ Biological Sciences or similar. Fluency in English (written and spoken). Experience in directing research work of undergraduate/master/pre-doctoral students. Experience in research related to: Study of stress response in plants of agronomic interest, Study and analysis of sRNAs in agricultural crops, POC systems for biomarker detection.

Merits to be considered:

Experience in plant molecular biology with agronomic interest, in particular: sRNA extraction and detection by RT-qPCR, NGS library development, biotechnological applications of CRISPR-Cas systems, plant transformation and pathogen infection.

WHAT IS OFFERED

Participate in the development of plant-integrated biosensors and offer cutting-edge technological solutions for application in the digitization of agriculture. Collaborate and interact with technological institutes and different agents of the agricultural sector. Work in a dynamic environment and a growing group. Participate in training activities (120 ECTs).

Contract conditions:

Indefinite contract for a Postdoctoral Researcher associated to the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (41.000 € - 52.000 €).

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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