Universidad de Alcalá

MASTER'S DEGREE IN THERAPEUTIC TARGETS OF CELL SIGNALLING: RESEARCH AND DEVELOPMENT

- To acquire training in bioethics in biomedical research: legal framework, regulations and professional ethics.
- To acquire safety training for laboratory work and protective equipment.
- To use statistics programs and databases in biomedicine.
- To know the molecules and signal transduction pathways and the potential role of elements of signalling pathways as therapeutic targets.
- To know the cellular processes mediated by signalling pathways and their alterations.
- To design experiments and research protocols and maintain a laboratory notebook.
- To handle experimental animals and cell cultures. To acquire practical training in molecular biology techniques: cloning, transfection, overexpression and gene silencing, RTPCR, methylation and immunoprecipitation. To acquire knowledge about flow cytometry, confocal microscopy and the use of radioactive isotopes.
- To know the methods and strategies of the pharmaceutical industry in the drug discovery and development process: high throughput screening (HTS); target and phenotype-based searches.
- To acquire knowledge on combinatorial chemistry and high productivity techniques in organic synthesis, scaling and pilot plant in drug development. To acquire training in structural determination techniques: crystallography, NMR, calorimetry and computational molecular modelling.
- To acquire training in pharmacogenetics and pharmacogenomics, omics strategies, applications of microarrays and protein mass spectrometry. To know strategies in research and translational medicine.
- To acquire training in management of the transfer of research and development results, clinical trials, patents, quality and certification.
- To acquire practical experience in professional performance in research or companies and working as a team in multidisciplinary environments.

For additional information, see the Memorandum.