



UNIVERSITY:

Universidad de Navarra

WIT AREA:

- Automotive, Mechatronics and Advance Manufacture**
- Health**
- Energy**
- IA**

WIT PROGRAMME'S RESEARCH LINE NAME:

Histopathological and molecular analysis of the formation of the myopia biomarker CUVAF (Conjunctival UltraViolet AutoFluorescence) in comparison with pinguecula and pterygium.

DOCTORAL PROGRAMME:

Doctoral program on medicines and health

<https://en.unav.edu/web/doctoral-program-in-medicines-and-health>

COMPLETE DESCRIPTION OF THE LINE (max. 1000 characters)

Myopia is the most common refractive error worldwide and it is estimated that by 2050, half of the world's population will be myopic. For the last two decades, the increase in prevalence in Asia has been very dramatic, however, also in both Europe and the USA there has been a worrying increase. The multifactorial origin of myopia could be attributable to both genetic and environmental factors. However, it is believed that environmental factors such as increased near work activities and decreased time spent outdoors may play a major role in the recent increase in myopia. The method to measure these



activities is principally by questionnaires but there are plenty of errors in the interpretation of results. The objective methods that is gaining momentum as a non-invasive and quantifiable biomarker to assess time spent outdoors, is conjunctival ultraviolet autofluorescence (CUVAF). These preclinical lesions of UV-induced conjunctival damage that may lead to changes in intra- and extra-cellular metabolites that are ultimately responsible for conjunctival autofluorescence. Our objective is to make a histopathological and molecular analysis of these lesions.

RESEARCH GROUP NAME:

Laboratory of experimental Ophthalmology

COORDINATOR:

- Last and first name; link to the “Portal of scientific production”:
Recalde, Sergio
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MEMBERS OF THE LINE RESEARCH:

Alfredo García-Layana

Patricia Fernández-Robredo

Sergio Recalde

María Hernández-Sánchez

Maite Moreno



Jaione Bezunartea

Idoia Belza

Elena Alonso

ANOTHER RESEARCH LINES OF THE GROUP: list of them

Preclinic and clinic investigation in Age related Macular Degeneration (AMD)

Neovascularización models

Geographic atrophy models

Preclinic and clinic investigation Macular Diabetic Edema

Clinic investigation High Myopia

- Entities involved in research lines and contact person:

- ✓ Academic entities:

- ✓ Industrial entities:
 - Splice Bio
 - BTI
 - Multiópticas
 - Thea

- Joint supervision of doctoral thesis with international universities or non-academic institutions:
 - None

- Brief group overview (max. 1000 characters)



The Laboratory of Experimental Ophthalmology of the Department of Ophthalmology of the Clinic is led by Dr. Alfredo García Layana and Dr. Patricia Fernández Robredo. It has a multidisciplinary team of professionals with a joint research career of almost 20 years in retinal pathologies, mainly in age-related macular degeneration (AMD), High Myopia (HM) and Diabetic Macular Edema (DME). During this time, the laboratory has combined clinical and translational experimentation, thanks to leading and participating in numerous projects funded in individual competitive calls and in ambitious multi-center FIS projects related to genetics, development and progression of AMD.

The laboratory, together with the CSIC and a spinoff (Secugen), has developed a diagnostic kit to determine the risk of development of AMD, which is patent pending. We actively participate in contracts and projects with the pharmaceutical industry and belong to several research networks in Ophthalmology, such as OFTARED.

- Link of the group to the “Portal of scientific production”
<https://www.cun.es/nuestros-profesionales/servicios-medicos/oftalmologia/laboratorio-oftalmologia-experimental>
- Pictures, links... to academic or industrial partners (if any)

<https://prnoticias.com/2022/11/29/multioplicas-lanza-su-campana-generacion-borrosa/>

ACADEMIC REQUIREMENTS:



Bachelor's degree in Biology, Biochemistry or Pharmacy

ADDITIONAL REQUIREMENTS:

Active person with an interest in learning about myopia and retinal diseases