



**UNIVERSITY: UNIVERSITY OF NAVARRA**

**WIT AREA:**

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

**WIT PROGRAMME'S RESEARCH LINE NAME: Complement system and retinal diseases**

**DOCTORAL PROGRAMME:**

**COMPLETE DESCRIPTION OF THE LINE (max. 1000 characters)**

Retinal diseases (RD) can be particularly devastating, as vision loss is irreversible and frequently severe. They are often multifactorial, and treatments are limited by our incomplete understanding of the mechanisms that lead to blindness. Among RD, one of the most prevalent is Age-related Macular Degeneration (AMD), the leading cause of blindness in people over 55. Complement system participates in the onset and development of RD, such as AMD. In this line we tackle it from different approaches from basic to translational and clinical research. The work planned and the results obtained will be focus on the involvement of the complement system in the pathology and how to find therapeutic targets. Our previous work demonstrated the relationship between complement polymorphisms and the different clinical forms of AMD. As a next step, cellular and animal models will be used. Also, a database of patients with advanced disease, called geographic atrophy, will be created and managed.



**RESEARCH GROUP NAME: RETINAL DISEASES AND THERAPIES**

**COORDINATOR:**

- Last and first name; link to the “Portal of scientific production”:  
Fernandez-Robredo, Patricia
- Department: Ophthalmology Department
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**MEMBERS OF THE LINE RESEARCH:**

María Hernández Sánchez

Sergio Recalde Maestre

Jaione Bezunartea Bezunartea

Maite Moreno Orduña

Idoia Belza Zuazu

**ANOTHER RESEARCH LINES OF THE GROUP:** list of them

- Inflammation involvement in macular degeneration
- Roles of matrix metalloproteinases in retinal pathologies
- Drug delivery systems as new therapeutical approaches for retinal pathologies
- Antioxidants and anti-inflammatory compounds for retinal diseases
- Environmental factors involved in the development of High Myopia
- Role of C-reactive protein in the development of CNV

- Entities involved in research lines and contact person:



- ✓ Academic entities:  
Universidad Complutense de Madrid. Prof. Rocío Herrero-Vanrell  
IDIBAPS. Blanca Molins
  
- ✓ Industrial entities:  
BTI. Francisco Muruzabal  
Splice Bio. Marianna DiScala  
IDP. Santiago Esteban and Laura Nevola  
Thea Laboratoires. Fanny Allan.
  
- Joint supervision of doctoral thesis with international universities or non-academic institutions:
  
- Brief group overview (max. 1000 characters)  
The Experimental Ophthalmology Laboratory has extensive experience in genetics and advanced therapies to treat retinal degenerative diseases, focused on searching innovative therapies to tackle retinal pathologies always directed to the patient. In the last years, they have prioritized the investigation of new drug delivery systems application in experimental models in collaboration with other academic groups. The group participated in an FP7 project (GA:305134; TargetAMD, [www.targetamd.eu](http://www.targetamd.eu)) focused on a cell-based gene therapy approach, which has been positively evaluated by Swiss Medic and currently waiting for additional results to follow a clinical trial. The entire team is also involved in international industry-guided clinical trials in gene therapy for AMD, as the only Spanish participating center.
  
- Link of the group to the “Portal of scientific production”



- Pictures, links... to academic or industrial partners (if any)

#### **ACADEMIC REQUIREMENTS:**

#### **MSc in Biological Sciences/Biochemistry/Pharmacy**

#### **ADDITIONAL REQUIREMENTS:**

Good English skills, both written and oral. Ability to work independently along with working in a group will be taken into account.