This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under Marie-Sklodowska Curie grant agreement No 101034285

UNIVERSITY: University of Navarre (UNAV), Center for Applied Medical Research.

WIT PROGRAMME´S RESEARCH LINE NAME: Design and validation of a non-human primate model of Parkinson's disease based on a disseminated synucleinopathy.

DOCOTORAL PROGRAMME: Doctoral program of applied medicine and biomedicine https://en.unav.edu/web/doctoral-program-of-applied-medicine-and-biomedicine

COMPLETE DESCRIPTION OF THE LINE

The research team *"Functional Neuroanatomy of the Basal Ganglia"* is currently taking advantage of gene therapy tools with viral vectors for the development of better animal models of Parkinson's disease as well as with therapeutic purposes intended to modify the progressive course of this neurodegenerative disorder. This specific project aims to develop an animal model mimicking advanced disease stages, with a disseminated synucleinopathy both in the substantia nigra pars compacta as well as throughout the cerebral cortex. Studies will be conducted in non-human primates (*Macaca fascicularis*), comprising gene therapy experiments, system neuroscience studies, microPET neuroimage tools and data analysis based on artificial intelligence algorithms. The Center for Applied Medical Research (www.cima.es) of the University of Navarra is an early-drug discovery center and focuses on translational biomedical research looking for patient-centered innovative medical approaches.

Wit
Welcoming
International
Talent

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RESEARCH GROUP NAME: FUNCTIONAL NEUROANATOMY OF THE BASAL GANGLIA

COORDINATOR:

- Last and first name; link to the "Portal of scientific production":
  - José L. Lanciego, MD, PhD.
- Department:
  - Neurosciences
- Email: jlanciego@unav.es
- Telephone number: +34 948 194 700 x 812002

MEMBERS OF THE LINE RESEARCH:

- Alberto J. Rico, PhD (Scientist)
- Ana Fajardo-Serrano, PhD (Postdoctoral researcher)
- Goiaz Ariznabarrena (Veterinarian)
- Alfonso Vázquez Míguez, MD, PhD (Research Collaborator)
- Julia Chocarro (Predoctoral student)
- Elvira Roda (Senior technician)
- Elena Martín (Technician)
- Sandra Arrieta, PhD (Technician)
- Alvaro Pejenaute, PhD (Technician)
- Adriana Honrubia (Technician)

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ANOTHER RESEARCH LINES OF THE GROUP:

- Design and validation of a non-human primate model of Parkinson's disease based on neuromelanin over-expression.
    - Aimed at developing a model of Parkinson's disease adequately mimicking the known neuropathology and pathophysiology of this neurodegenerative disorder.
- Glucocerebrosidase gene therapy for the treatment of Parkinson's disease.
    - Research conducted in keeping with the ongoing collaboration with Handl Therapeutics B.V. (Leiden, Belgium). Goal to develop a disease-modifying therapy slowing down or even ideally arrest the nautral progression of this disorder and related synucleinopathies.

- Entities involved in research lines and contact person:

✓ Academic entities:
    - Center for Applied Medical Research (CIMA), University of Navarra. Contact person: José L. Lanciego.
    - Biomedical Research Network Center for Neurodegenerativ Disorders (CiberNed). Carlos III Health Institute. Contact person: José L. Lanciego.

✓ Industrial entities:
    - Handl Therapeutics B.V. (www.handltherapeutics.com). Contact person: José Luis Lanciego.

- Group review

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The research team "Functional Neuroanatomy of the Basal Ganglia" is engaged in frontiers research in the field of Parkinson's disease from more than 25 years. All research activities are conducted in non-human primates. Their research activity allowed the foundation of a spin-off company named Handl Therapeutics. The team also is a founding member of CiberNed (www.ciberned.es). Current funding comes from the Spanish Government, European programs such as H2020, European Research Council and the Joint Program in Neurodegenerative Diseases (JPND) as well as from the Michael J. Fox Foundation for Parkinson's Research. Research activities are often conducted in close collaboration with several national and international research groups. Predoctoral fellows of the host team are engaged in an extensive training program and often have the chance of receiving complementary training in research teams -national and international- with which we routinely collaborate.

- Link of the group to the "Portal of scientific production"

  https://cima.cun.es/en/research/research-programs/research-programs-neuroscience/parkinson-disease-research-group

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

  - Center for Applied Medical Research: www.cima.es
  - Biomedical Research Network Center for Neurodegenerativ Disorders: www.ciberned.es
  - Handl Therapeutics: www.handltherapeutics.com