

Transgenic Huntingtons disease monkey resource

<https://www.neurodegenerationresearch.eu/survey/transgenic-huntingtons-disease-monkey-resource/>

Principal Investigators

CHAN, ANTHONY WING SANG

Institution

EMORY UNIVERSITY

Contact information of lead PI

Country

USA

Title of project or programme

Transgenic Huntingtons disease monkey resource

Source of funding information

NIH (NINDS)

Total sum awarded (Euro)

€ 3,215,768.81

Start date of award

01/12/2003

Total duration of award in years

3

The project/programme is most relevant to:

Huntington's disease

Keywords

Huntington Disease, Monkeys, Transgenic Organisms, nonhuman primate, sperm cell

Research Abstract

? DESCRIPTION (provided by applicant): This proposal has evolved based on our recent success in developing transgenic Huntington's disease nonhuman primates (HD-NHPs). Longitudinal study on HD-NHPs demonstrated the progressive development of clinical features

similar to HD patients using clinical measurements similar to humans. Cognitive behavioral decline, neural anatomical changes, alterations of genome and metabolite profiles as disease progresses strongly suggested the potential application of HD-NHPs as a pre-clinical animal model for studying neurodegeneration, HD pathogenesis and the development of novel therapeutics. In order to make this novel animal model available for the research community, an HD-NHP resource that will serve as a hub for facilitating the applications of the HD-NHP model by providing characterized HD-NHPs and longitudinal biomaterials for investigators will be established. The overall goal of this application is to establish a Transgenic Huntington's Disease Monkey Resource (THDMR). This resource will meet the needs of the biomedical research community by establishing the infrastructure for generating high quality, well-characterized HD-NHPs for collaborative research to generate new information which will benefit the HD and neurodegeneration scientific community. To accomplish our goal, we will establish a small breeding colony for the production of a small number young HD-NHPs that will be readily available for investigators. We plan to start with a small-scale production, but with the capacity for quick expansion with the aid of assisted reproductive techniques that are well established in PI's laboratory. Biomaterial repositories including peripheral blood samples, cell culture and sperm cryobank will also be established. To further facilitate translational application of this novel model, our goal is to overcome the current key, limiting factor, which is their availability. We will develop and optimize sperm cryopreservation methods to safeguard future production and preserve the unique genetics of the HD-NHPs so that frozen semen could also be efficiently distributed to primate centers worldwide to produce HD-NHPs for use by investigators. It is an exciting time for neuroscience research and modeling of human inherited genetic diseases using transgenic NHP. The Specific Aims for the proposal are: Aim 1. To establish a breeding colony and provide F1 HD-NHPs with essential characterization that readies them for preclinical research, Aim 2. To establish a HD-NHP biomaterial repository and Aim 3. To optimize the cryopreservation method of HD-NHP sperm and the establishment of sperm cryobank.

Lay Summary

PUBLIC HEALTH RELEVANCE: The proposed study has evolved based on our success in the creation of a transgenic Huntington's disease (HD) monkey model sponsored by the ORIP that recapitulate disease progression and develop clinical features similar to HD patients. In order to facilitate the preclinical application of the HD monkey model, a Transgenic Huntington's Disease Monkey Resource (THDMR) will be established to provide a high quality HD monkey model and longitudinal biomaterials for investigators. To further safeguard the unique genetics of the HD-NHPs and availability of the HD-NHPs, HD sperm cryopreservation methods will be developed and optimized, and frozen sperm will be deposited and distributed through the sperm cryobank for reanimation of the HD monkeys.

Further information available at:

Types:

Investments > €500k

Member States:

United States of America

Diseases:

Huntington's disease

Years:

2016

Database Categories:

N/A

Database Tags:

N/A