

## Position for 3 years Doctoral studies

The [Laboratory of Neurodegenerative Diseases](#) of the Institute of Biomedical Imaging / Molecular Imaging Research Center (Commissariat à l'Énergie Atomique (CEA); France) proposes a 3 years contract for Doctoral Studies. The contract will be financed by the [CEA International PhD program in Life Sciences](#) (<http://www-dsv.cea.fr/en/phd-program>).

The subject is :

### **Development of a new animal model of Alzheimer's disease: Multidisciplinary evaluation by histology, biochemistry, PET and MRI imaging and therapeutic approaches.**

The aim of the project is to develop a new primate (Macaca) model of Alzheimer's disease and to follow-up this model by imaging biomarkers (MRI / PET). The successful candidate will have an experience in animal handling (Primates if possible) and will be motivated by multidisciplinary approaches including histology and biochemistry to follow-up animal models of cerebral diseases. MRI and PET images recording and processing will also be an important part of the project.

The project will be conducted within the Molecular Imaging Research Center (MIRCent - <http://www-dsv.cea.fr/en/presentation/plates-formes-technologiques/plates-formes-d-imagerie-in-vivo/mircen/mircen>) in Fontenay aux Roses (close to Paris, France). a centre dedicated to preclinical trials in gene and cell therapy.

For further information see: [http://www-instn.cea.fr/Publication\\_Sujet.php3?nomfichier=SL-DSV-08-053&id\\_rubrique=140&langue=uk&lang=EN](http://www-instn.cea.fr/Publication_Sujet.php3?nomfichier=SL-DSV-08-053&id_rubrique=140&langue=uk&lang=EN)

Admission to the Doctoral Program is by competitive entrance examination. Admission is reserved for students currently preparing a Master's degree, master 2 or equivalent diploma that qualifies them for a doctoral program in their home country. Candidates will be evaluated on the basis of their academic performance (excellent track record during their undergraduate scholarship) and scientific potential.

The salary of the grant holder for the duration of the thesis contract is nationally and internationally competitive. It will depend on the previous training of the student, in agreement with current CEA regulations. As an indicator, the first-year annual gross salary will vary from 21,200 euros to 23,000 euros.

Pre-selected candidates will be invited to the CEA Center at Saclay (France) for a three-day visit. During their stay, candidates will be interviewed by the program's Selection Committee in order to evaluate their scientific knowledge. The travel and accommodation expenses of non local candidates will be covered entirely by the program.

The dead line for application is 8 March 2008.

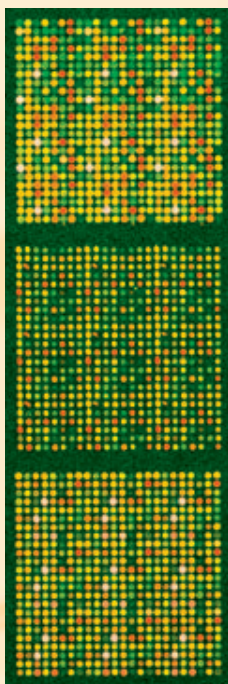
Contacts : [Marc.Dhenain@cea.fr](mailto:Marc.Dhenain@cea.fr) / [Philippe.Hantraye@cea.fr](mailto:Philippe.Hantraye@cea.fr)

The applicant should provide a letter of motivation and the name of two reference persons who can be contacted and provide recommendations.

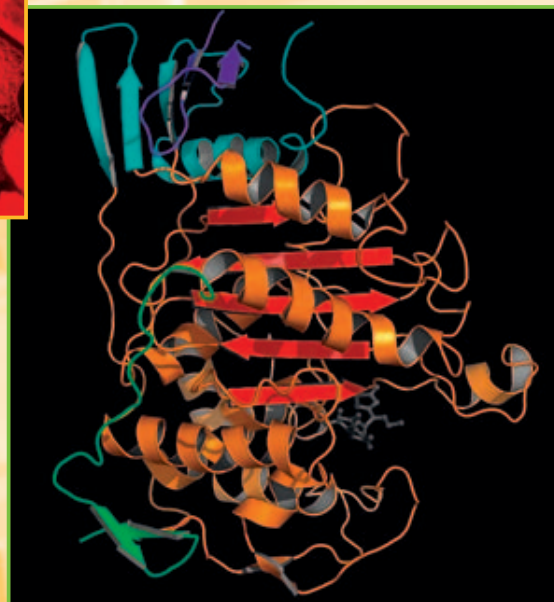
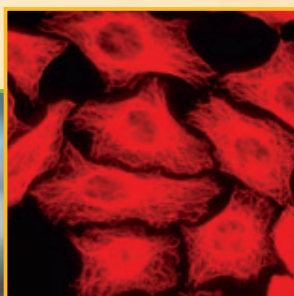


# INTERNATIONAL PhD PROGRAM IN LIFE SCIENCES 2008

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**INFORMATION AND ONLINE APPLICATION:** [www-dsv.cea.fr/PhDtraining](http://www-dsv.cea.fr/PhDtraining)

Head of the PhD program: Pr Christophe Carles

Life Science Division – Building 144 – CEA Saclay – 91191 Gif-sur-Yvette cedex – France

**DEADLINE FOR COMPLETION OF THE ONLINE APPLICATION: MARCH 8th, 2008**

<u>Research field</u> :	Life Sciences  Physiopathology Life Sciences  Medical imaging
<u>Intitulé du sujet</u> :	<b>Development of a new animal model of Alzheimer's disease: Multidisciplinary evaluation by histology, biochemistry, PET and MRI imaging and therapeutic approaches</b>
<u>Abstract</u> :	<p>Rational: Alzheimer's disease is a major dementia in our societies with major consequences in term of public health and socio-economical damages. Today, there is no curative treatment or early diagnostic test available. The discovery of new treatments against this disease requires the use of new predictive animal models of the pathology and also necessitates new biomarkers to evaluate in vivo and as soon as possible the brain alterations that are characteristic of the disease and that are susceptible to be modulated by new treatments. Genetic forms of AD represent only 5% of the human cases. Recent works suggest that approximately 50% of the cases of AD are associated to alterations of the insulin metabolism. Indeed several authors suggest that some forms of AD are a type 3 diabetes.</p> <p>Objectives: The aim of this project is to develop a new animal model of Alzheimer's disease based on the type 3 diabetes hypothesis. The developed strategy relies on the use of a toxin that modulates insulin and insulin receptors signalling pathways. The developed model will be followed up by various imaging modalities: positron emission tomography (PET) (2-[18F]fluoro-2-deoxy-D-glucose (FDG) and markers of senile plaques (one of the main lesion of Alzheimer's disease)); magnetic resonance imaging (MRI); neuropathological and biochemical evaluations. Therapeutic trials with reference molecules will be tested on this model. The interest of this project is the proposed multidisciplinary and translational approaches that will allow optimizing the effective use of the new preclinical model of Alzheimer's disease that will be developed.</p>
<u>Location</u> :	Direction des sciences du vivant/Institut d'Imagerie BioMédicale  Service MIRCEN  Starting date : Septembre 2008
<u>Contact person</u> :	<b>Marc DHENAIN</b> -- laboratoire -- SHFJ , 4 place du général Leclerc 91401 Orsay Telephone : 01-69-86-77-58 E-mail : Marc.Dhenain@cea.fr