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AMAROC - Cancers animaux modèles pour la recherche en oncologie comparée

Rapport Hcéres

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agence d'évaluation de la recherche
et de l'enseignement supérieur

Section des Unités de recherche

AERES report on the research unit
Animaux Modèles pour la Recherche en Oncologie
Comparée
From the
Ecole Nationale Vétérinaire, Agroalimentaire et
l'Alimentation Nantes-Atlantique (ONIRIS)

January 2011



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Animaux Modèles pour la Recherche en Oncologie
Comparée
From the
Ecole Nationale Vétérinaire, Agroalimentaire et
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Le Président de l'AERES

Didier Houssin

Section des unités
de recherche

Le Directeur

Pierre Glorieux

January 2011

Research Unit

Name of the research unit: Animaux Modèles pour la Recherche en Oncologie Comparée (AMaROC)

Requested label: UPR

N° in the case of renewal

Name of the director: M. Jérôme ABADIE

Members of the review committee

Committee chairman

M. Charles THEILLET, Université Montpellier 2

Other committee members

Ms. Ursula HIBNER, Université Montpellier 2

M. Salem CHOUAIB, Université Paris 11

Observers

AERES scientific advisor

M. Jean ROSENBAUM

University, School and Research Organization representatives

M. Pierre SAI

(Le président de la section CNECA a été sollicité mais n'a pas pu être représenté)

Report

1 • Introduction

- Date and execution of the visit

The visit was organized on January 20, 2011 and began at 8:30 am. Following a presentation by J. Abadie, the committee met separately the students and post-docs, technicians, and scientists. The committee then met privately for drafting the report. The visit ended at 12h15.

- History and geographical localization of the research unit, and brief presentation of its field and scientific activities

This team is a recent creation within the premise of the Veterinary School of Nantes. It results from the fusion of subgroups originally working in different departments of the Veterinary Hospital (Pathology, imaging and surgery). It aims at developing clinical studies on cancer in domestic animals (dogs and cats), be the corner stone of the future Center of clinical investigation and research the Vet school envision to create. The leading idea being that cancers in cats and dogs could be excellent models of the disease in humans and fill the gap between mouse models and the clinical reality in humans.

- Management team

This is a small team where the direction team is limited to the Director himself.

- Staff members (on the basis of the application file submitted to the AERES)

| | Past | Future |
|--|------|--------|
| N1: Number of researchers with teaching duties (Form 2.1 of the application file) | | 5 |
| N2: Number of full time researchers from research organizations (Form 2.3 of the application file) | | 0 |
| N3: Number of other researchers including postdoctoral fellows (Form 2.2 and 2.4 of the application file) | | 2 |
| N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file) | | 3 |
| N5: Number engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file) | | |
| N6: Number of Ph.D. students (Form 2.7 of the application file) | | |
| N7: Number of staff members with a HDR or a similar grade | | 1 |

2 • Overall appreciation on the research unit

- Summary

This is a new project aiming at creating a novel and original research unit based on cancer in domestic animals (cats and dogs). It is based on the unique expertise the veterinary school of Nantes has acquired in this field. Malignancies principally investigated will be mammary cancer in cats and dogs, non-Hodgkin B cell lymphoma, CNS cancer and soft tissue sarcomas in dogs. This is a timely project since there is a growing consensus in favor of building bridges between spontaneous cancer in domestic animals and human malignancies, based on indications of pathophysiological similarities.

- Strengths and opportunities

- Excellent expertise in clinical management of cancer in animals;
- Strong network of veterinarians ;
- Unique opportunity to have access to novel and original cancer models in dogs and cats ;
- Strong links built between the veterinary clinic and the Cancer Center ;
- Unique opportunity to make imaging studies and radioimmunotherapy studies in animal models that strongly mimic real clinical situations in humans ;
- The greater genetic homogeneity of dogs make them powerful models for genetic studies on cancer predisposition, drug sensitivity or study genome/environment interactions.

- Weaknesses and threats

- Staffing is mainly based on young researchers with an important teaching load.
- Pre-clinical studies are based on spontaneous cancer in pets. This involves identical difficulties in recruiting patients in trials as for trials involving patients. The recruitment capacity will be determining.

- Recommendations

- Care should be taken to increase the number of regular meetings of the whole staff, which at present works in 2 to 3 different buildings. Furthermore, practical measures should be envisaged to facilitate interactions with teams at the CRCNA as part of regular participation to meetings of these teams.
- A significant effort should be envisaged to increase the number (or the Full time involvement) of researchers in charge of these ambitious projects. PhD level engineers should be highered.

- Production results

| | |
|---|-----|
| A1: Number of permanent researchers with teaching duties (recorded in N1) who are active in research | 3 |
| A2: Number of permanent researchers without teaching duties (recorded in N2) who are active in research | 2 |
| A3: Ratio of members who are active in research among staff members $[(A1 + A2)/(N1 + N2)]$ | 60% |
| A4: Number of HDR granted during the past 4 years | 0 |
| A5: Number of PhD granted during the past 4 years | 1 |

3 • Specific comments

- **Appreciation on the results**

There is a growing consensus on the strong relevance of cancer in dogs, particularly for what concerns breast cancer, gliomas, non Hodgkin B cell lymphomas and sarcomas. The Vet School in Nantes has for almost 10 years proven its willingness to develop interface research with human health aspects and has made important efforts to structure its capacities in this direction. This project aiming at creating de novo this preclinical facility has been developed in strong interaction with the CRCNA (Centre de Recherche en Cancérologie de Nantes Angers) and IRCNA (Institut Régional du Cancer de Nantes Angers). Personnel from both institution participate to this project. This team has no previous activity. Team members have had a constant publication activity in veterinary medicine and now aim to open their scope to more general cancer journals.

- **Appreciation on the impact, the attractiveness of the research unit and of the quality of its links with international, national and local partners**

Scientists are already active in collaborative projects funded by INCa or ANR. A large ANR grant on environmental risk is currently under review.

- **Appreciation on the management and life of the research unit**

The leader of the team is bright and energetic and seems well respected by the other members. Internal animation has been judged somewhat insufficient (see recommendations) and should increase.

- **Appreciation on the scientific strategy and the project**

Two principal aims are pursued:

- 1- develop a clinical trial platform within the premise of the animal clinic at the veterinary school. The increased development of the disease in animals will allow to obtain rapid return on treatment response to novel therapeutics. Furthermore, the pathophysiological setting being very similar to that in humans, valuable information will be produced in terms of recurrence and metastatic spread.
- 2- domestic animals are exposed to identical environments than their owners (apart from food). They thus constitute highly valuable witnesses of the relationship between environmental exposure to chemical or physical pollution and cancer. Furthermore, their genetic homogeneity make them particularly suited to linkage or SNP studies.

Scientific projects were overall judged promising. However, for what concerns the project on environmental risk, there were some questions on the adequation of manpower needed to accomplish it.

| Intitulé UR / équipe | C1 | C2 | C3 | C4 | Note globale |
|--|----------|----|----|----|--------------|
| CANCERS ANIMAUX: MODÈLES POUR LA RECHERCHE EN ONCOLOGIE COMPARÉE | Non noté | B | A | B | B |

C1 Qualité scientifique et production

C2 Rayonnement et attractivité, intégration dans l'environnement

C3 Gouvernance et vie du laboratoire

C4 Stratégie et projet scientifique



Statistiques de notes globales par domaines scientifiques (État au 06/05/2011)

Sciences du Vivant et Environnement

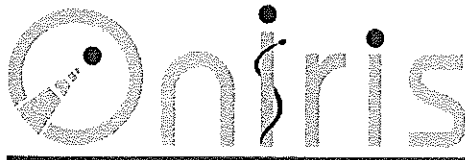
| Note globale | SVE1_LS1_LS2 | SVE1_LS3 | SVE1_LS4 | SVE1_LS5 | SVE1_LS6 | SVE1_LS7 | SVE2_LS3 * | SVE2_LS8 * | SVE2_LS9 * | Total |
|--------------|--------------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| A+ | 7 | 3 | 1 | 4 | 7 | 6 | | 2 | | 30 |
| A | 27 | 1 | 13 | 20 | 21 | 26 | 2 | 12 | 23 | 145 |
| B | 6 | 1 | 6 | 2 | 8 | 23 | 3 | 3 | 6 | 58 |
| C | 1 | | | | | 4 | | | | 5 |
| Non noté | 1 | | | | | | | | | 1 |
| Total | 42 | 5 | 20 | 26 | 36 | 59 | 5 | 17 | 29 | 239 |
| A+ | 16,7% | 60,0% | 5,0% | 15,4% | 19,4% | 10,2% | | 11,8% | | 12,6% |
| A | 64,3% | 20,0% | 65,0% | 76,9% | 58,3% | 44,1% | 40,0% | 70,6% | 79,3% | 60,7% |
| B | 14,3% | 20,0% | 30,0% | 7,7% | 22,2% | 39,0% | 60,0% | 17,6% | 20,7% | 24,3% |
| C | 2,4% | | | | | 6,8% | | | | 2,1% |
| Non noté | 2,4% | | | | | | | | | 0,4% |
| Total | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% |

* les résultats SVE2 ne sont pas définitifs au 06/05/2011.

Intitulés des domaines scientifiques

Sciences du Vivant et Environnement

- SVE1 Biologie, santé
 - SVE1_LS1 Biologie moléculaire, Biologie structurale, Biochimie
 - SVE1_LS2 Génétique, Génomique, Bioinformatique, Biologie des systèmes
 - SVE1_LS3 Biologie cellulaire, Biologie du développement animal
 - SVE1_LS4 Physiologie, Physiopathologie, Endocrinologie
 - SVE1_LS5 Neurosciences
 - SVE1_LS6 Immunologie, Infectiologie
 - SVE1_LS7 Recherche clinique, Santé publique
- SVE2 Ecologie, environnement
 - SVE2_LS8 Evolution, Ecologie, Biologie de l'environnement
 - SVE2_LS9 Sciences et technologies du vivant, Biotechnologie
 - SVE2_LS3 Biologie cellulaire, Biologie du développement végétal



École Nationale Nantes Atlantique
Vétérinaire, Agroalimentaire et de l'Alimentation

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Rapport d'évaluation

S2UR120001383 – Cancers animaux : modèles pour la recherche en oncologie comparée – 0442674T

Volet Général

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2. Overall appreciation on the research unit Recommendations

“care should be taken to increase the number of regular meetings of the whole staff”

- Les réunions scientifiques concernant l'ensemble des membres de l'unité et notamment les étudiants (initialement programmées en 2 journées/ an) seront portées à 1 réunion de 2 heures tous les 2 mois (6/ an), avec présentation en alternance de 2 sujets (projets et/ou résultats).
- Une programmation trimestrielle et un compte-rendu de séances seront réalisés.

“ practical measures should be envisaged to facilitate interactions with team at the CRCNA as part of regular participation to meetings of these teams”

- Une liste de mails a été créée pour l'ensemble des membres de l'unité, incluant les étudiants. Cette liste est distribuée par le mailing systématique du CRCNA pour la diffusion des informations scientifiques (séminaires, appels d'offres...).
- Les membres d'AMaROC participent à l'animation scientifique du CRCNA. Exemple : conférence de Julie Rousseau (en contrat post-dctoral) le 11 février 2011 sur l'imagerie animale préclinique.
- Les membres d'AMaROC ont un accès permanent à l'ensemble des plateformes technologiques du CRCNA (autorisation donnée par Marc Bonneville, Directeur actuel de l'U892) en relation avec les personnes référentes.

Santé et alimentation au cœur de la vie

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3. Specific comment

Appreciation on the scientific strategy and the project

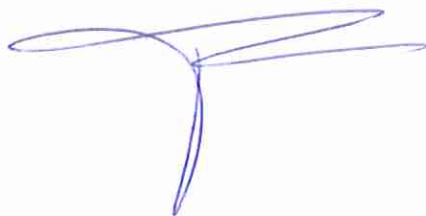
“for what concerns the project on environmental risk, there were some questions on the manpower needed to accomplish it”

➤ Sur les 2 années à venir, la budgétisation de ce projet inclut notamment le recrutement d'un attaché de recherche clinique (0,75 ETP) dédié à la centralisation des prélèvements biologiques et des données épidémiologiques, ainsi que d'un post-doctorant (0,75 ETP) dédié à l'interprétation des analyses. De surcroît, ce projet porté par AMaROC est élaboré en étroite collaboration une autre unité de recherche d'Oniris : le LABERCA, qui met à disposition 0,85 ETP de son personnel. Au total, avec la participation des membres d'AMaROC (1,15 ETP), ce projet devrait regrouper 3,5 ETP sur les 2 années à venir.

Le 6 avril 2011, Lu et approuvé,
Jérôme ABADIE, Directeur de l'unité AMaROC

A handwritten signature in black ink, appearing to read 'J. Abadie', with a horizontal line drawn through it.

Le 7 avril 2011, Lu et approuvé,
Pierre SAI, Directeur Général d'Oniris

A handwritten signature in blue ink, appearing to read 'P. Sai', with a horizontal line drawn through it.

Santé et alimentation au cœur de la vie