UE Projet tuteuré et bibliographie

Objectifs de l'UE : Réaliser une recherche bibliographique

Travailler en équipe – Gérer un projet

Réaliser un rapport et une présentation orale

Résultats d'apprentissage de la gestion de projet et du travail en équipe

Elaborer un projet

Prendre des décisions au sein de l'équipe

Partager les informations

Créer une dynamique d'équipe

Résultats d'apprentissage de la recherche bibliographique

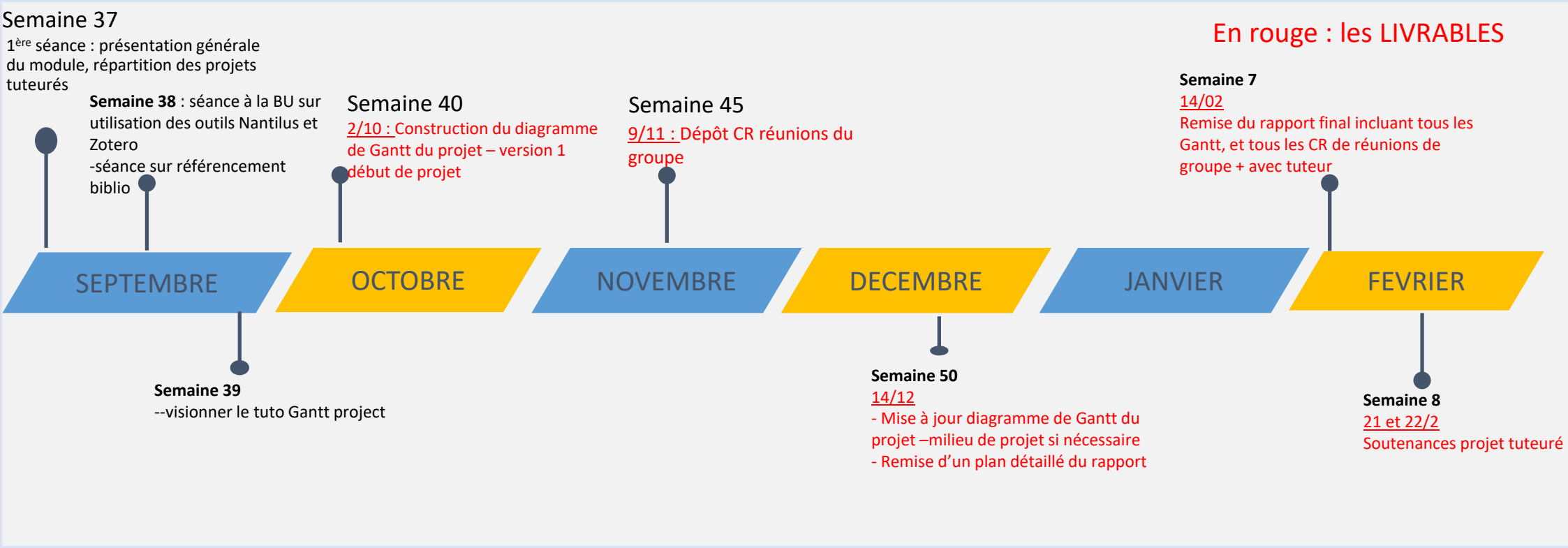
Réaliser une recherche bibliographique à l'écrit

Évaluer la pertinence des ressources par rapport à l'environnement de recherche et à la problématique

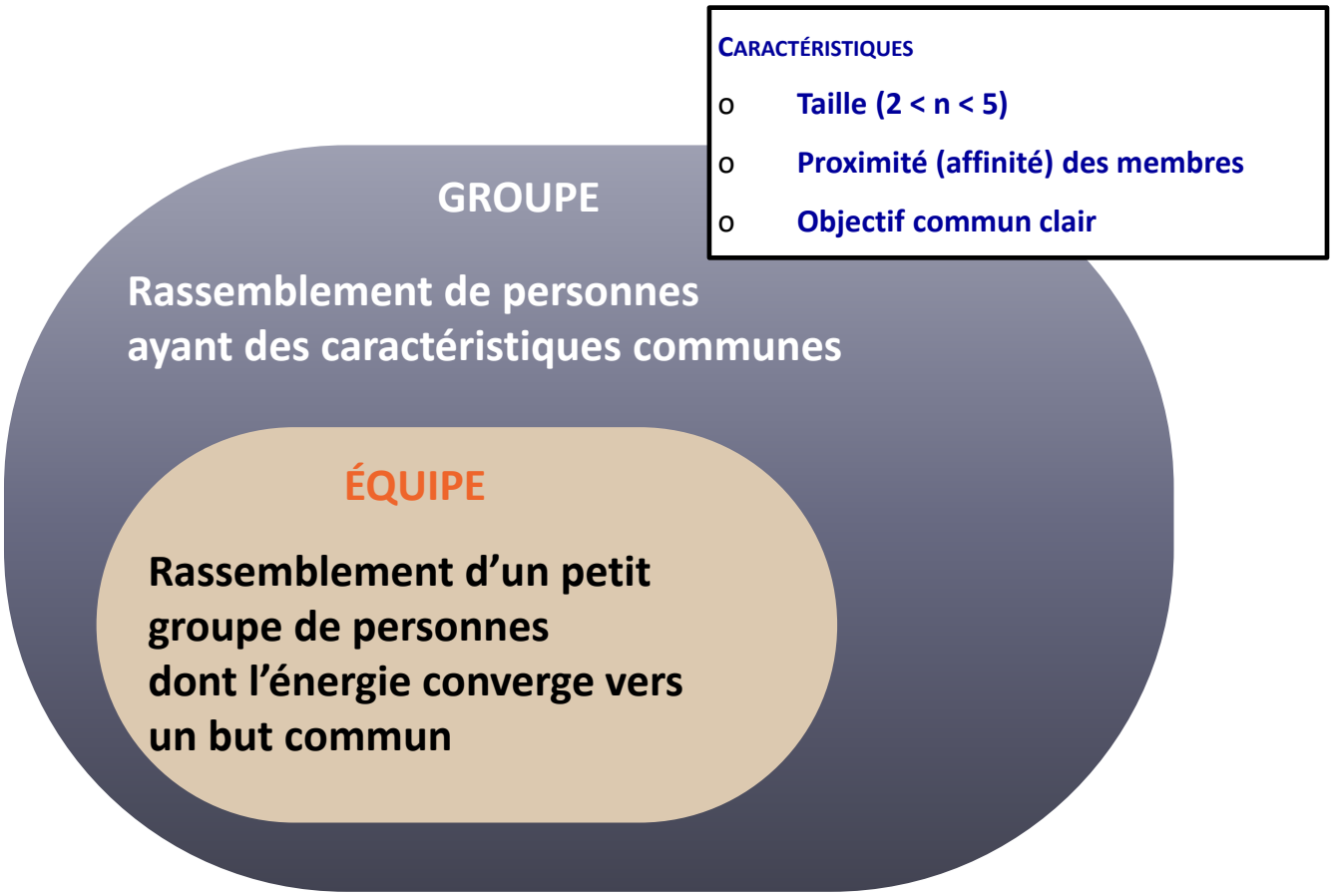
Prendre du recul et avoir un regard critique sur le contenu des ressources

Sandrine Huclier : Sandrine.huclier@univ-nantes.fr

Frise chronologique – déroulé projet tuteuré



I - gestion de projet et travail en équipe



3 bonnes raisons de travailler en groupe

Les 9 enjeux du travail en équipe

Définir et distribuer des rôles

Prendre des décisions

Construire un projet commun

Créer une dynamique de groupe

Travailler en mode collaboratif

Partager les informations

Réguler les conflits

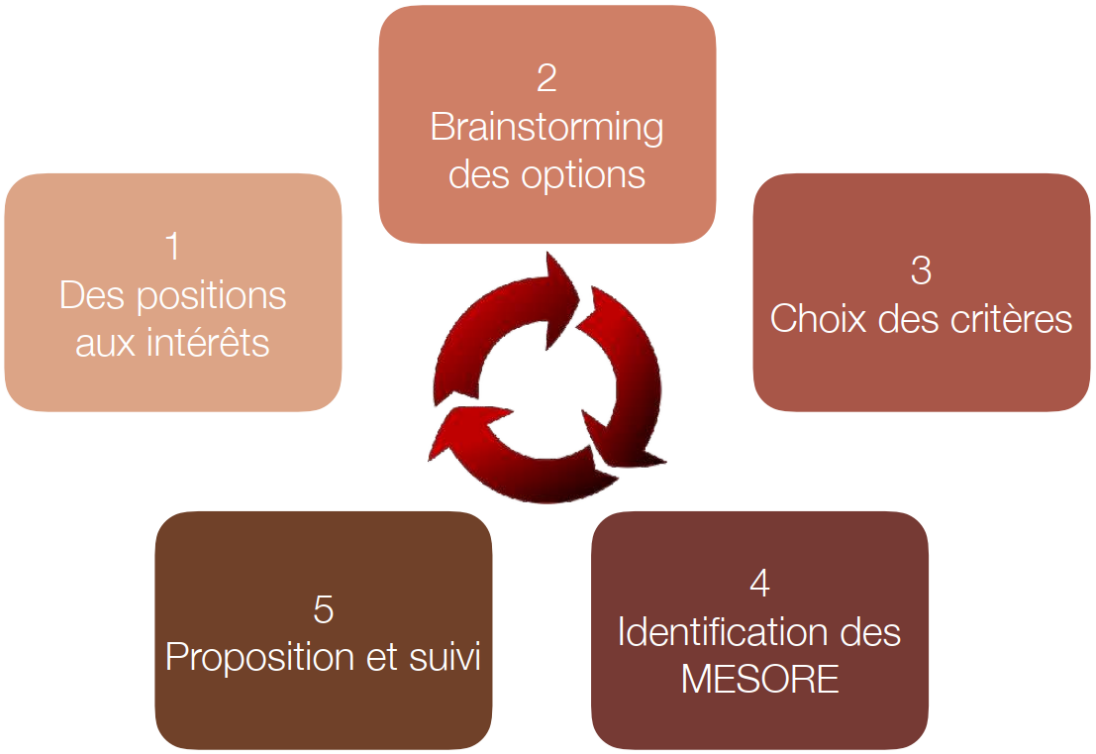
Accueillir de nouveaux membres

Evaluer et célébrer le travail accompli

Travailler en équipe

Travailler en équipe

Négocier en cas de conflits



Visionner le module numérique “Apprendre à communiquer en équipe”
https://madoc.univ-nantes.fr/pluginfile.php/1787110/mod_resource/content/11/index.html

+ Test à faire en ligne (semaine 39 au plus tard)

Gabarits de reunion disponibles sur Madoc

Dépôt des compte-rendus des réunions du groupe (au sein du groupe et avec le tuteur) : semaine 45

Puis dans rapport final tous les CR de réunions (du groupe et avec le tuteur): semaine 7 de 2024

1- Gérer ses choses à faire objectivement et les classer (prioriser)

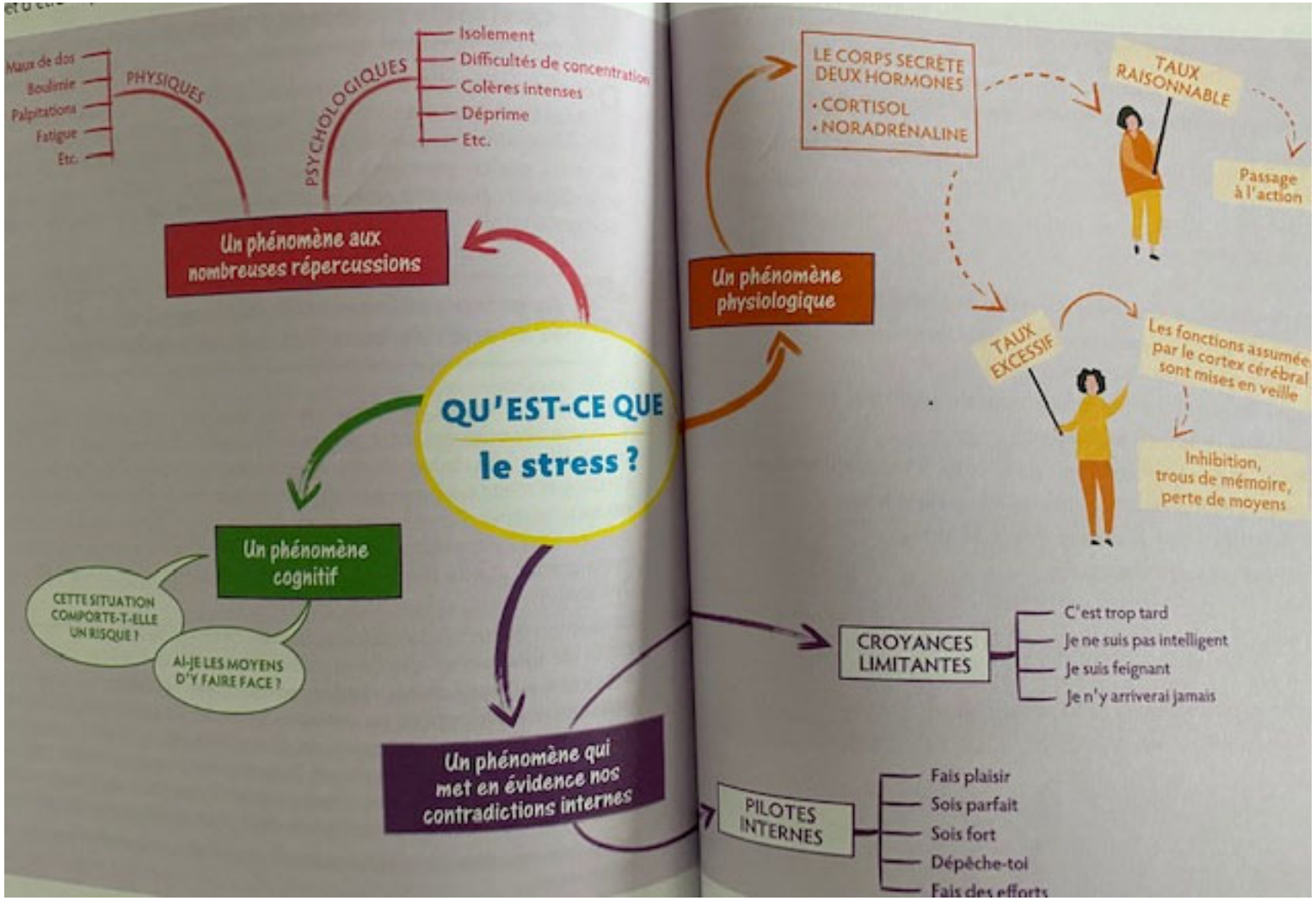
2- Gérer son temps (les planifier)

3- Apprivoiser les manifestations physiques et physio du stress (palpitations, blanc, …) en se remettant en confiance :

- Prise de conscience : lister vos manifestations pour mieux les identifier et agir
- Rituel : nom + prénom + lire tout le sujet; respiration, etc
- Commencer par les points faciles (relance irrigation des autres couches du cerveau : débogage)
- Relativiser : l'idée n'est pas d'avoir 20 mais de faire au mieux

Cours à réaliser en asynchrone par vous-même : Gestion de projet
https://madoc.univ-nantes.fr/course/view.php?id=32169

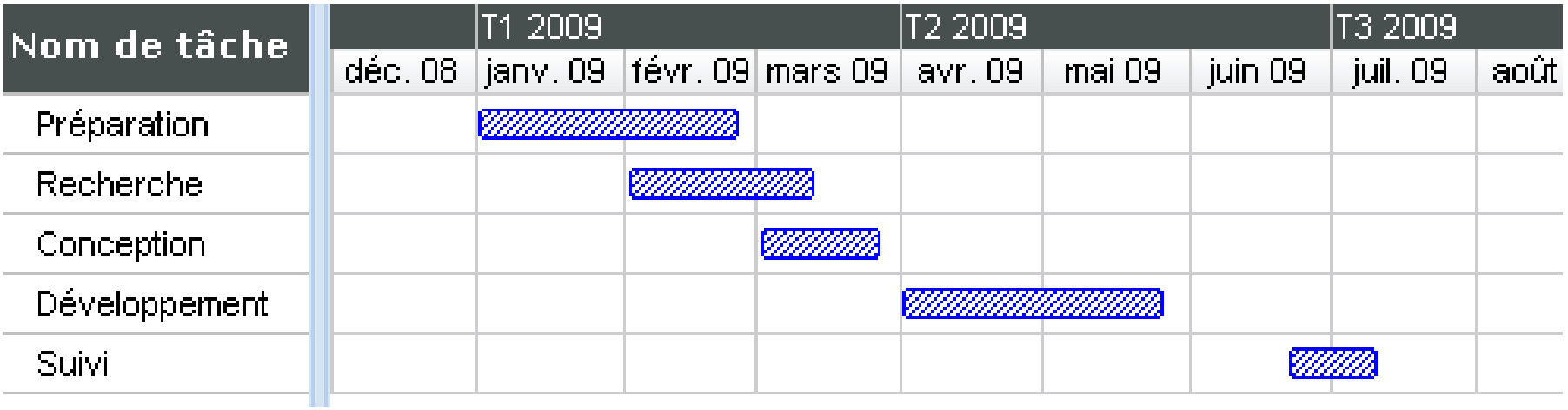
A faire semaines 38- 39


QU'EST-CE QUE
le stress ?
Un phénomène aux nombreuses répercussions
PHYSIQUES
Maux de dos
Boulimie
Palpitations
Fatigue
Etc.
PSYCHOLOGIQUES
Isolement
Difficultés de concentration
Colères intenses
Déprime
Etc.
Un phénomène physiologique
LE CORPS SECRÈTE DEUX HORMONES
• CORTISOL
• NORADRÉNALINE
TAUX RAISONNABLE
Passage à l'action
TAUX EXCESSIF
Les fonctions assumées par le cortex cérébral sont mises en veille
Inhibition, trous de mémoire, perte de moyens
Un phénomène cognitif
CETTE SITUATION COMPORTE-T-ELLE UN RISQUE ?
AI-JE LES MOYENS D'Y FAIRE FACE ?
Un phénomène qui met en évidence nos contradictions internes
CROYANCES LIMITANTES
C'est trop tard
Je ne suis pas intelligent
Je suis feignant
Je n'y arriverai jamais
PILOTES INTERNES
Fais plaisir
Sois parfait
Sois fort
Dépêche-toi
Fais des efforts

lister objectivement les choses à faire (toutes !) et les planifier …

fait gagner du temps et est anti-stress !!!

=> Diagramme de Gant



Visionner les tutos pour Ganttproject
(semaines 37 à 39)

Gantt Project 2.6 :
Tutoriel Université de Loraine (version 2.6) : http://dptgeii.iutsd.univ-lorraine.fr/cours/lpsarii/QCP/TUTOGanttProject.pdf

Tutoriel plus ancien de l'académie Aix-Marseille : https://www.lyc-luynes.ac-aix-marseille.fr/spip/sites/www.lyc-luynes/spip/IMG/pdf/Ganttproject_tutoriel.pdf

vidéos Youtube :
https://www.youtube.com/watch?v=wk_AGveybNs
https://www.youtube.com/watch?v=U0UdSfsDOj4

Construction du diagramme de Gantt du projet – version 1 début de projet à déposer sur Madoc
Semaine 40

Mise à jour diagramme de Gantt du projet –milieu de projet à déposer sur Madoc
Semaine 50

II - Recherche bibliographique

Semaine 37
3 Séances à la BU : presentation des outils de recherché biblio Nantilus et de référencement Zotero

Visionner le tuto zotero
semaines 37 à 39

Tutoriel Zotero

Réalisé par l'université de Bordeaux : https://bibliotheques.u-bordeaux.fr/Se-former/Les-tutoriels/Les-tutos-Zotero

Cours

Information scientifique: type, recherche et traitement

I - Pourquoi rechercher de l'information scientifique et techniques (IST)?

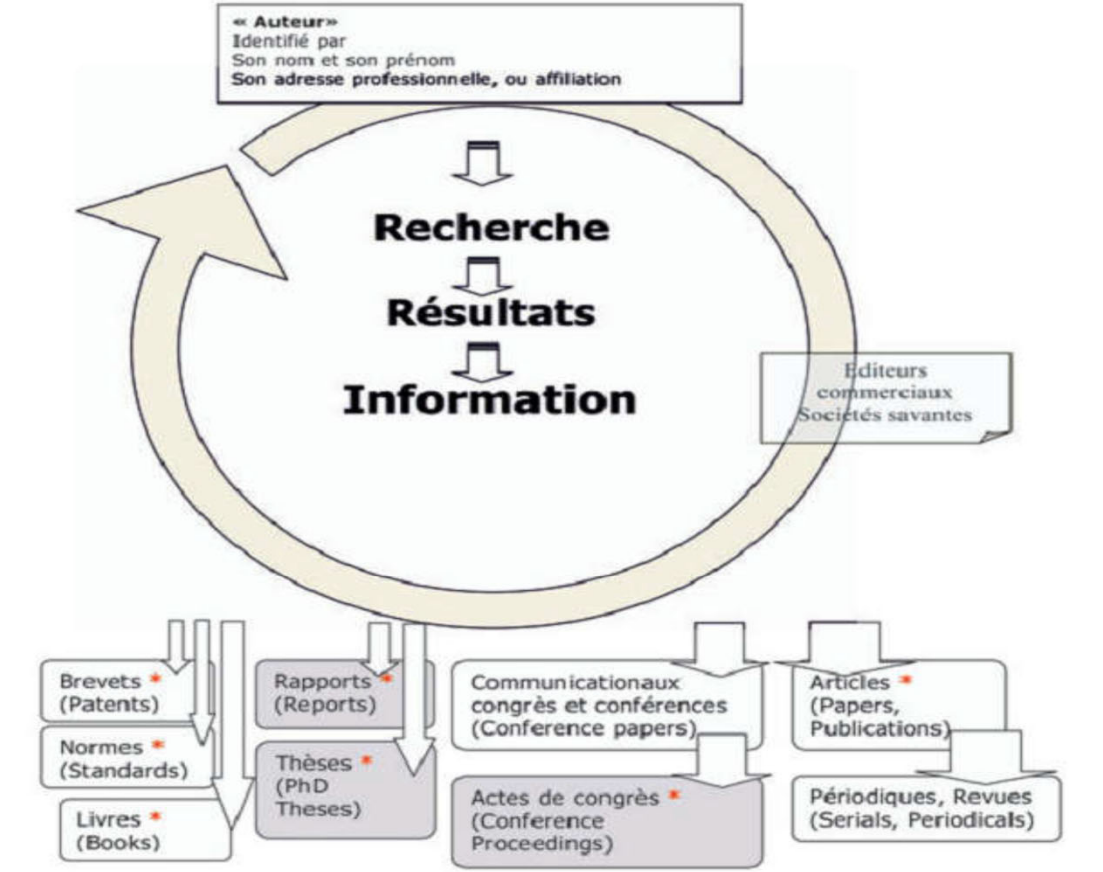
Pourquoi l'industrie a besoin de l'information scientifique ?

- État de l'art sur le sujet traité / protocoles expérimentaux
- Veille technologique / innovation / émergence de nouveaux marchés liés à de nouvelles technologie
- Normalisation

Pourquoi un consultant a besoin de l'information scientifique ?

- Constitution d'un dossier pour un industriel

II – Comment publier de l'information scientifique et techniques (IST)?



Types de documents et canaux de publication scientifiques

III – Quel type d'information scientifique et techniques (IST)?

- la **« communication »** ; article non exhaustif sur la recherche menée mais qui présente les principaux résultats

- le **« full article »** ; article détaillé sur la recherche menée (notamment parties expérimentales développées)

- la **« review »** ; article de synthèse sur l'état de l'art dans une thématique donnée, réalisé par une personne dans le domaine

- la **thèse** ; partie bibliographique sur le sujet de la thèse + travaux réalisés par un doctorant pendant sa thèse

- le **livre** ; traitement d'une thématique assez large. Parfois un seul auteur, le plus souvent plusieurs auteurs (par chapitre), chacun traitant de son domaine de compétences

- le **brevet** ; description d'une invention, c'est-à-dire d'un procédé industriel

CHEMICAL REVIEWS

Review

pubs.acs.org/CR

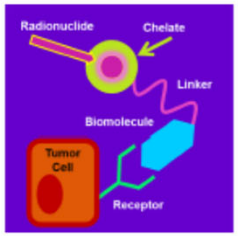
Radiometals for Combined Imaging and Therapy

Cathy S. Cutler,*[,†] Heather M. Hennkens,[†] Nebiat Sisay,[†,‡] Sandrine Huclier-Markai,[§] and Silvia S. Jurisson[‡]

[†]University of Missouri Research Reactor Center, Columbia, Missouri 65211, United States

[‡]Department of Chemistry, University of Missouri, Columbia, Missouri 65211, United States

[§]Laboratoire Subatech, UMR 6457, Ecole des Mines de Nantes/Université de Nantes/CNRS-IN2P3, 4 Rue A. Kastler, BP 20722, F-44307 Nantes Cedex 3, France



CONTENTS

1. INTRODUCTION

The use of radionuclides in medicine is based largely on the discoveries of two critical concepts, the "tracer principle" and the "magic bullet". In 1913, George de Hevesy developed the tracer approach and was the first to recognize that radionuclides could be used as tracers to follow how the native element or compound containing the element was distributed either in plants or in animals.[1] He based his theory on the principle that radioactivity has the advantage of being easily detected at very low quantities, allowing for the introduction of minute quantities, nano- to picomoles, that will not perturb the system. Thus the radiolabeled tracer allows for noninvasive measurement of distribution and function in a biological system. Paul Ehrlich later developed the "magic bullet" concept highlighting how biomolecules, particularly antibodies, could be utilized as targeting molecules to transport toxins selectively to cancerous tissues. For example, radionuclides can be attached to antibodies that are selective for receptors that are overexpressed on a certain disease site such as tumor cells. This concept has been expanded to include a host of nanocarriers, from small molecules such as folic acid to peptides and proteins, microspheres, and most recently nanoparticles. Both concepts have been utilized to develop radiopharmaceuticals.

Radiopharmaceuticals are drugs that consist of two parts: a radionuclide that imparts the mechanism of action through its decay and a targeting biomolecule or organic ligand that determines the localization of the radiopharmaceutical. They can be used either as diagnostics for the noninvasive imaging of disease or as therapeutics to deliver a toxic payload selectively, for instance, to a tumor site. Most of the development and optimization of radiopharmaceuticals occurs when designing or modifying the target selectivity of the molecule, not the mechanism of action, as with other drugs. Diagnostic agents consist of radionuclides that decay to release photons with a high enough energy to penetrate the body and be detected externally but low enough to be collimated by a camera. Therapeutic agents consist of radionuclides that decay to release a particle, such as a β^- or α particle that can cause ionization and break bonds resulting in the intended ablation. Until recently most radiopharmaceuticals were designed to be used solely for either diagnostics or therapeutics. It was thought

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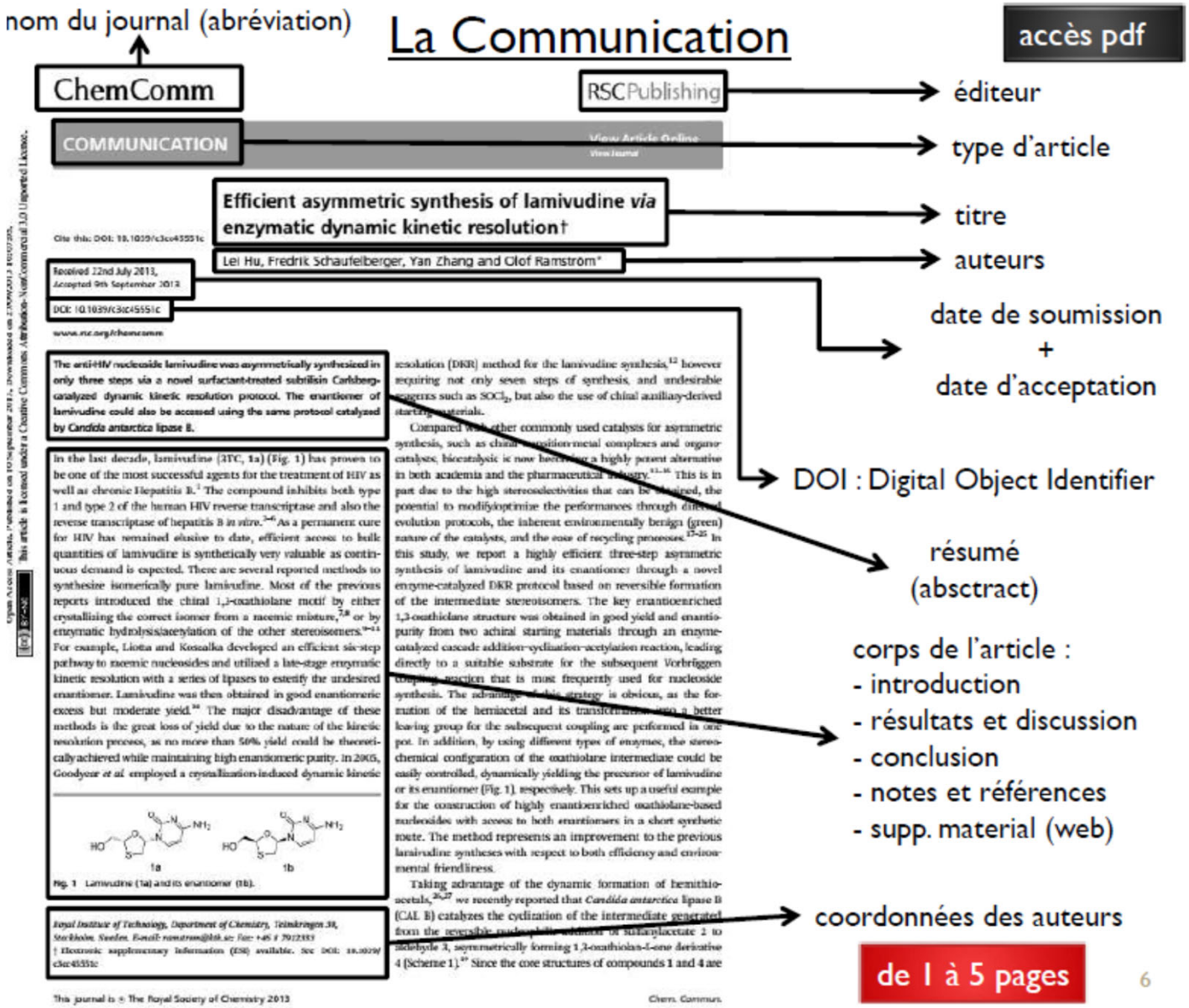
accès pdf

Corps de l'article

- Introduction
- Présentation des différents points
- Conclusion
- Références

Plusieurs dizaines de pages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La Communication
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ChemComm
RSC Publishing
éditeur
COMMUNICATION
View Article Online
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type d'article
Efficient asymmetric synthesis of lamivudine via enzymatic dynamic kinetic resolution†
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Lei Hu, Fredrik Schaufelberger, Yan Zhang and Olof Ramström*
auteurs
Received 22nd July 2013,
Accepted 9th September 2013
DOI: 10.1039/c3cc45551c
date de soumission
+
date d'acceptation
DOI : Digital Object Identifier
résumé
(absctract)
corps de l'article :
- introduction
- résultats et discussion
- conclusion
- notes et références
- supp. material (web)
coordonnées des auteurs
de 1 à 5 pages
6

Full article

DOI:10.1158/0008-5472.CAN-08-0232

Research Article

A Novel Bispecific, Trivalent Antibody Construct for Targeting Pancreatic Carcinoma

David V. Gold,[1] David M. Goldenberg,[1] Habibe Karacay,[1] Edmund A. Rossi,[2] Chien-Hsing Chang,[2,3] Thomas M. Cardillo,[3] William J. McBride,[3] and Robert M. Sharkey[1]

[1]Garden State Cancer Center, Center for Molecular Medicine and Immunology, Belleville, New Jersey; [2]IBC Pharmaceuticals, Inc.; and [3]Immunomedics, Inc., Morris Plains, New Jersey

Abstract

Preclinical and clinical studies have demonstrated the application of radiolabeled mAb-PAM4 for nuclear imaging and radioimmunotherapy of pancreatic carcinoma. We have now examined the ability of a novel PAM4-based, bispecific monoclonal antibody (mAb) construct, TF10, to pretarget a radiolabeled peptide for improved imaging and therapy. TF10 is a humanized, bispecific mAb, divalent for mAb-PAM4 and monovalent for mAb-679, reactive against the histamine-succinyl-glycine hapten. Biodistribution studies and nuclear imaging of the radiolabeled TF10 and/or TF10-pretargeted hapten-peptide (IMP-288) were conducted in nude mice bearing CaPan1 human pancreatic cancer xenografts. ^{125}I-TF10 cleared rapidly from the blood, with levels decreasing to <1% injected dose per gram (ID/g) by 16 hours. Tumor uptake was 3.47 ± 0.66% ID/g at this time point with no accumulation in any normal tissue. To show the utility of the pretargeting approach, ^{111}In-IMP-288 was administered 16 hours after TF10. At 3 hours postadministration of radiolabeled peptide, imaging showed intense uptake within the tumors and no evidence of accretion in any normal tissue. No targeting was observed in animals given only the ^{111}In-peptide. Tumor uptake of the TF10-pretargeted ^{111}In-IMP-288 was 24.3 ± 1.7% ID/g, whereas for ^{111}In-IMP-288 alone it was only 0.12 ± 0.002% ID/g at 16 hours. Tumor/blood ratios were significantly greater for the pretargeting group (~1,000:1 at 3 hours) compared with ^{111}In-PAM4-IgG (~5:1 at 24 hours; $P < 0.0003$). Radiation dose estimates suggested that TF10/^{90}Y-peptide pretargeting would provide a greater antitumor effect than ^{90}Y-PAM4-IgG. Thus, the results suggest that TF10 pretargeting may provide improved imaging for early detection, diagnosis, and treatment of pancreatic cancer as compared with directly radiolabeled PAM4-IgG. [Cancer Res 2008;68(12):4819–26]

Introduction

Pancreatic cancer is an insidious disease with a particularly high mortality rate. In large measure, this is due to the location of the pancreas in the retroperitoneum, where the tumor can grow in a silent fashion. Symptoms that might suggest the patient seek medical assistance are usually not evident until an advanced stage of tumor growth, and even at this time, the clinical presentation can be vague and representative of varying pathologies. Combined with the fact that at present, there are no effective means for treatment of this disease, patient outcomes are generally poor; 5-year survival is <5%. However, if detected early, when the cancer is still restricted to the pancreas, treatment by surgical resection, with or without chemotherapy and radiation therapy, can improve 5-year survival to roughly 25%; yet even this statistic is not very encouraging (1, 2). Consequently, considerable effort has been undertaken to find new methods to detect pancreatic cancer at an early stage of tumor growth (pancreatic intraepithelial neoplasia 3) before it becomes invasive, and to improve survival through earlier and more effective treatments.

We have identified a unique biomarker present on mucin expressed by >85% of invasive pancreatic adenocarcinomas, including early stage I disease and the precursor lesions, pancreatic intraepithelial neoplasia and intraductal papillary mucinous neoplasia (3). The specific epitope, as detected by mAb-PAM4 (4), is absent from normal and inflamed pancreatic tissues, as well as most other malignant tissues. Thus, detection of the epitope provides a high diagnostic likelihood for the presence of pancreatic neoplasia. Early clinical studies using ^{131}I- and ^{99m}Tc-labeled, murine PAM4 IgG or Fab′, respectively, showed specific targeting in 8 of 10 patients with invasive pancreatic adenocarcinoma (5, 6). Of the two negative studies, one had a poorly differentiated pancreatic carcinoma that did not express the PAM4-epitope, whereas the other patient was later found to have pancreatitis rather than a malignant lesion. Accordingly, we believe that the high specificity of PAM4 for pancreatic cancer could be helpful in the detection and diagnosis of early disease. In addition to improved detection, ^{90}Y-PAM4 IgG was found to be effective in treating large human pancreatic cancer xenografts in nude mice (7), and when combined with gemcitabine, further improvements in therapeutic response were observed (8, 9). A Phase I therapy trial in patients who failed gemcitabine treatment was recently completed, finding the maximum tolerated dose of ^{90}Y-humanized PAM4 IgG to be 20 mCi/m^2 (10). Although all patients showed disease progression at or after week 8, initial shrinkage of tumor was observed in several cases. Clinical studies are now underway to evaluate a fractionated dosing regimen of ^{90}Y-hPAM4 IgG in combination with a radiosensitizing dose of gemcitabine.

Preclinical studies in xenograft models of colorectal cancer and lymphoma have suggested that delivery of radionuclides with pretargeting procedures can provide a significant therapeutic advantage over directly radiolabeled antibodies (11–16). In addition, we have shown that pretargeting procedures can be used in combination with ^{99m}Tc or ^{124}I for superior imaging capability over directly radiolabeled antibody fragments (17, 18). Thus, a pretargeting system based on the specificity of PAM4 for pancreatic

Note: Supplementary data for this article are available at Cancer Research Online (http://cancerres.aacrjournals.org/).

Requests for reprints: David V. Gold, Garden State Cancer Center, 520 Belleville Avenue, Belleville, NJ 07109. Phone: 973-844-7025; Fax: 1-973-844-7020; E-mail: dvgold@gscancer.org.

doi:10.1158/0008-5472.CAN-08-0232

accès pdf

Corps de l'article
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- Présentation des résultats
- Discussion
- Conclusion
- Références
- Suppl. material

de 5 à 10 pages

Exemple avec supp. | supp.

CHEMISTRY
A EUROPEAN JOURNAL

DOI: 10.1002/chem.201103503

TRAP, a Powerful and Versatile Framework for Gallium-68 Radiopharmaceuticals**

Johannes Notni,*[a] Jakub Šimeček,[a, b] Petr Hermann,[b] and Hans-Jürgen Wester[a]

Dedicated to Prof. em. Dr. rer. nat. habil. Ernst Anders on the occasion of his 70th birthday

The remarkable success of ^{68}Ga-labeled peptides in neuroendocrine tumor diagnostics gave a major boost to the development of ^{68}Ga-labeled tracers for positron emission tomography (PET).[1a] In contrast to common PET isotopes, ^{68}Ga ($t_{1/2}$ = 68 min; $E_{\beta+,max}$ = 1.89 MeV) is not produced by on-site cyclotrons but, similarly to ^{99m}Tc production for scintigraphy, is obtained from ^{68}Ge/^{68}Ga radioisotope generators ($t_{1/2}$(^{68}Ge) = 270.8 days). Conjugation of biologically active molecules to bifunctional chelate ligands and subsequent $^{68}Ga^{3+}$ complexation delivers radiopharmaceuticals that bind to pathologically overexpressed target structures with high affinity and thus allow for non-invasive molecular imaging in patients.

Until now, the design of ^{68}Ga tracers mainly relied on DOTA[1] (Scheme 1), which is ideally suited for larger metal ions (particularly lanthanides) but less so for the smaller Ga^{3+} ion. However, the utility of the smaller NOTA[2a] system (Scheme 1) for Ga^{3+} complexation has been shown two decades ago.[2] As it has been found that it forms Ga^{III} complexes with higher kinetic stability and allows higher ^{68}Ga labeling yields, conjugates of some of its bifunctional derivatives (mainly NODAGA,[2b] Scheme 1) are increasingly utilized in the development of ^{68}Ga radiopharmaceuticals in recent times. Inspired by these results, we report here the synthesis, properties, and preclinical evaluation of ^{68}Ga radiopharmaceuticals derived from NOTA-analogous *Tri*-Azacyclononane-*P*hosphinic acids[3] (abbreviated TRAP, see Scheme 1 and Table 1) and reveals their enormous utility for nuclear medicine and molecular imaging.

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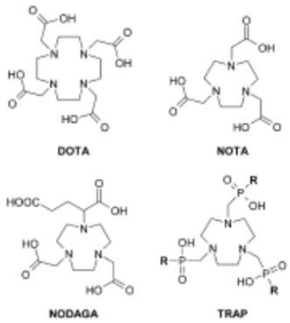
[b] J. Šimeček, Prof. Dr. P. Hermann
Department of Inorganic Chemistry, Faculty of Science
Charles University in Prague (Czech Republic)
[**] TRAP = *Tri*azacyclononane-phosphinic acid.
Supporting information for this article is available on the WWW under http://dx.doi.org/10.1002/chem.201103503.



Scheme 1. Macrocyclic chelators discussed in the text (see also Table 1).

Table 1. TRAP ligands used in this study.

Identifier	Substituent R (Scheme 1)	Ref.
TRAP-H	H	[3a]
TRAP-Ph	Ph	[3a,c]
TRAP-OH	CH_2-OH	[3]
TRAP-Pr	CH_2-CH_2-COOH	[3]

The $^{68}Ga^{3+}$ complexation behavior was compared for TRAP ligands (Table 1), DOTA, and NOTA. Figure 1 shows that TRAP ligands are able to incorporate ^{68}Ga nearly quantitatively (> 95 %) at much lower ligand concentrations (c_L) and, due to the low pK_a of phosphinic acid moieties (ca. 0.7–1.5[4,5]), also in strongly acidic media; in the case of TRAP-OH[4] and TRAP-Pr[5] even at a pH as low as 0.5. As this allows ^{68}Ga labeling by directly using the neat eluate (0.1 M HCl) of the very popular Obninsk generator, greatly facilitated kit production of ^{68}Ga tracers could be achieved. Figure 2 illustrates that particularly TRAP-Pr rapidly incorporates ^{68}Ga at 25 °C and c_L = 3 μM, whereas neither DOTA nor NOTA can be labeled under these conditions. However, in line with previous reports[2d] we found that unlike DOTA, NOTA can be readily labeled at room temperature when using a fairly high ligand concentration of c_L = 100 μM (see the Supporting Information for details).

CHEMISTRY
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Supporting Information

TRAP, a Powerful and Versatile Framework for Gallium-68 Radiopharmaceuticals**

Johannes Notni,*[a] Jakub Šimeček,[a, b] Petr Hermann,[b] and Hans-Jürgen Wester[a]

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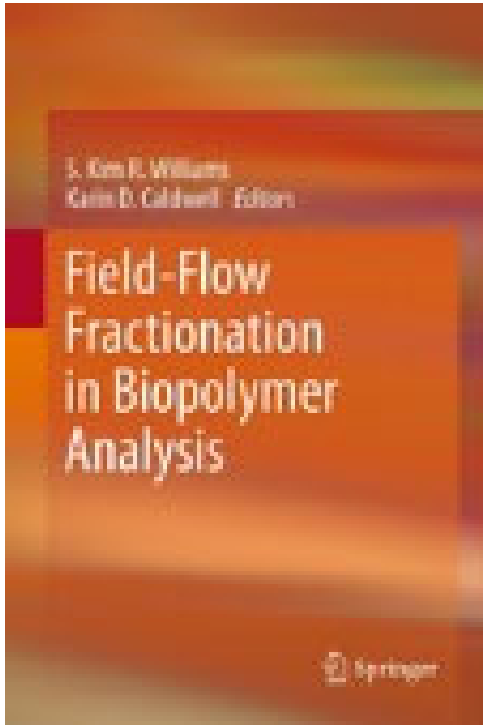

accès web

Table of contents (17 chapters)

quelques centaines de pages

La thèse

UNIVERSITÉ DE BRETAGNE OCCIDENTALE

ECOLE DOCTORALE DES SCIENCES DE LA MATIÈRE, DE L'INFORMATION ET DU VIVANT

THESE DE DOCTORAT

Spécialité : Chimie

Etude structurale des polysaccharides pariétaux de l'algue rouge *Asparagopsis armata* (Bonnemaisoniales)

Présentée par

Sandrine GARON-LARDIERE

Soutenue le 24 février 2004

Devant le jury composé de

M. FERRIERES Vincent, Docteur, ENS Chimie Rennes	Rapporteur
M. POTIN Philippe, Chargé de Recherches, CNRS Roscoff	Rapporteur
Mme MOREAU Nicole, Professeur, ENS Chimie Paris	Examinateur
M. DESLANDES Eric, Professeur, Université de Brest	Examinateur
M. CORBEL Bernard, Professeur, Université de Brest	Examinateur
M. GUEZENNEC Jean, Docteur, IFREMER BREST	Directeur de thèse
M. CARLSON RUSS W., Professeur, CCRC (Athens, Georgia, USA)	Invité
M. JY MOIGNE, SA ALGUES et MER, Ouessant	Invité

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Corps de l'article

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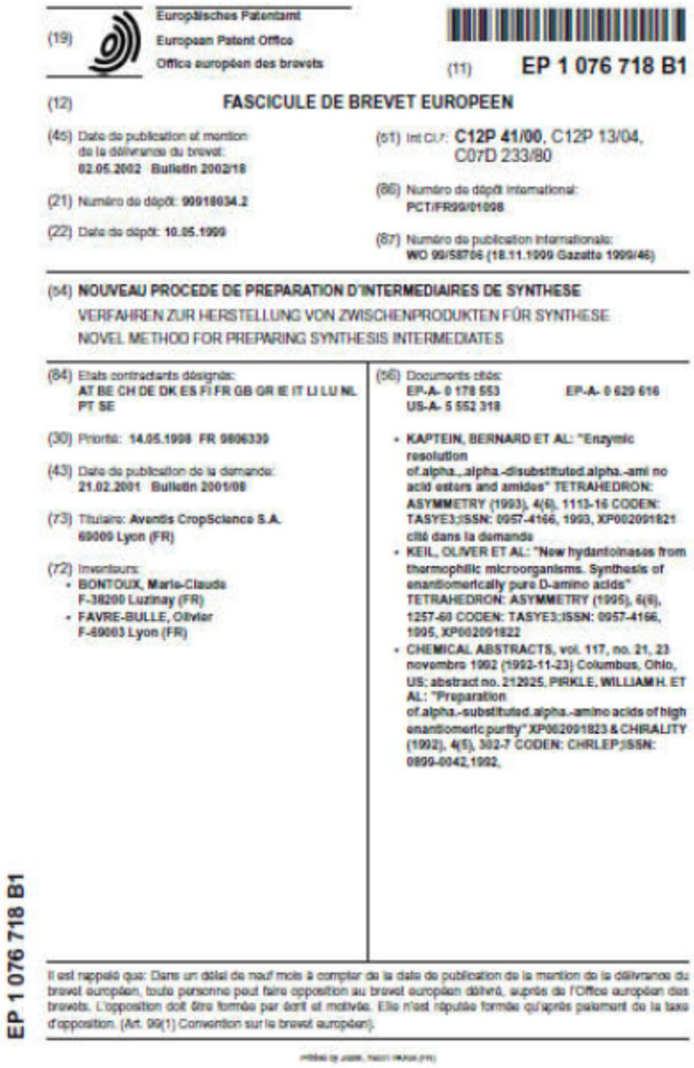
- Description expérimentale
- Présentation des résultats
- Discussion
- Conclusion
- Références

100 à 200 pages

F – Le brevet (patent)

Le brevet

accès pdf



(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 076 718 B1

(12) FASCICULE DE BREVET EUROPEEN

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02.05.2002 Bulletin 2002/18

(51) Int Cl.7: C12P 41/00, C12P 13/04, C07D 233/80

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PCT/FR99/01098

(22) Date de dépôt: 10.05.1999

(87) Numéro de publication internationale:
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(54) NOUVEAU PROCEDE DE PREPARATION D'INTERMEDIAIRES DE SYNTHESE
VERFAHREN ZUR HERSTELLUNG VON ZWISCHENPRODUKTEN FÜR SYNTHESE
NOVEL METHOD FOR PREPARING SYNTHESIS INTERMEDIATES

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(73) Titulaire: Aventis CropScience S.A.
69009 Lyon (FR)

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quelques dizaines à quelques centaines de pages

US006331547B1

(12) **United States Patent**
Zhu et al.

(10) **Patent No.: US 6,331,547 B1**
(45) **Date of Patent: Dec. 18, 2001**

(54) **WATER SOLUBLE SDZ RAD ESTERS**

(75) Inventors: **Tianmin Zhu**, Monroe, NY (US); **Syed M. Shah**, East Hanover, NJ (US); **Richard W. Saunders**, Palisades, NY (US)

(73) Assignee: **American Home Products Corporation**, Madison, NJ (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/639,610**

(22) Filed: **Aug. 16, 2000**

Related U.S. Application Data

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(51) **Int. Cl.**[7] **C07D 498/16**; C07D 498/18; C07D 491/06; A61K 31/395; A61K 31/445

(52) **U.S. Cl.** **514/291**; 540/456

(58) **Field of Search** 514/291; 540/456

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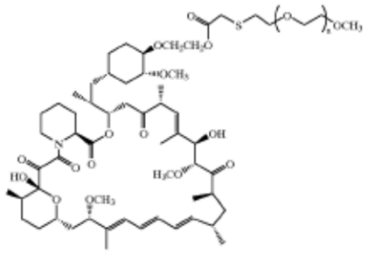
(57) **ABSTRACT**

This invention provides novel water soluble pegylated esters of rapamycin, having the general structure:



wherein n is an integer from about 5 to about 450, as well as pharmaceutical compositions containing these compounds and methods for their use as immunosuppressive, anti-inflammatory, antifungal, antiproliferative and antitumor agents.

18 Claims, No Drawings

Intérêt des différentes formes de littérature

⇨ le livre, la revue :
+ permet de se faire une idée globale sur la thématique
- pas de détail expérimental
- selon l'année de la publication, pas forcément à jour

⇨ le full paper :
+ permet d'avoir une description expérimentale précise
- pas forcément représentatif des techniques en cours si trop ancien

⇨ la communication :
+ si récente, permet de voir les dernières tendances
- si trop ancienne, moins d'intérêt

⇨ le brevet :
+ permet de voir les utilisations industrielles dans un domaine
précis
- difficile à lire
- toute application industrielle n'est pas forcément brevetée (secret industriel)

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- délimiter le sujet en début de recherche
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⇨ Avant de commencer la recherche :
- quelle est la question posée
- quel aspect du sujet souhaitons-nous aborder
- quels aspects exclure
- quels sont les mots clés les plus pertinents
- quel type de document (livre, thèse, revue, article, brevet…)

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Measurement of ^{43}Sc and ^{44}Sc production cross-section with an 18 MeV medical PET cyclotron

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HIGHLIGHTS

- The production cross sections of Sc-43 and Sc-44 by proton irradiation were measured.
- The thick target production yields and purities were evaluated.
- Method based on irradiating the whole target by constant surface density proton beam.
- Measurements performed using a beam transfer line and a 18 MeV medical PET cyclotron.

ARTICLE INFO

Keywords:
PET radioisotopes
Medical cyclotrons
Scandium
Cross-section
Positron Emission Tomography (PET)

ABSTRACT

^{43}Sc and ^{44}Sc are positron emitter radionuclides that, in conjunction with the β^- emitter ^{47}Sc, represent one of the most promising possibilities for theranostics in nuclear medicine. Their availability in suitable quantity and quality for medical applications is an open issue and their production with medical cyclotrons represents a scientific and technological challenge. For this purpose, an accurate knowledge of the production cross sections is mandatory. In this paper, we report on the cross section measurement of the reactions ^{43}Ca(p,n)^{43}Sc, ^{44}Ca(p,2n)^{43}Sc, ^{46}Ti(p,α)^{43}Sc, and ^{44}Ca(p,n)^{44}Sc at the Bern University Hospital cyclotron. A study of the production yield and purity performed by using commercially available enriched target materials is also presented.

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THESE de DOCTORAT de l'UNIVERSITE PARIS XI

Spécialité :
CHIMIE

présentée par

Lucie BONIN

pour obtenir le grade de DOCTEUR de l'UNIVERSITE PARIS XI

Etude de la spéciation des actinides vis-à-vis de ligands d'intérêt pour la décorporation

Soutenue le 11 janvier 2008 devant la commission d'examen

M. B. Grambow	Rapporteur
M. S. Nikitenko	Rapporteur
M. G. Cote	Examinateur
M. M. Leroy	Examinateur
M. Ph. Moisy	Examinateur
M. E. Simoni	Examinateur
M. A. Ananyev	Membre invité

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