UNIVERSITEIT GENT

FACULTEIT **GENEESKUNDE EN GEZONDHEIDSWETENSCHAPPEN**

Decanaat
Prof. dr. G. Vanderstraeten - Decaan

Aan de voorzitter van de Medische Stichting
Mathilde E. Horlait-Dapsens
Hertogstraat 1
1000 BRUSSEL

uw kenmerk	**ons kenmerk**	**datum**
	GE51	14-05-2012
	e-mail	
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Betreft: specialisatie beurs Medische Stichting Mathilde E. Horlait-Dapsens

Mijnheer de Voorzitter

Met betrekking tot het toekennen van de specialisatiebeurs van de Medische Stichting HORLAIT-DAPSENS, werd aan alle vakgroepen van onze faculteit een oproep tot kandidaten gericht.

De ontvangen kandidaturen (3) werden onderzocht door de Facultaire Commissie voor Wetenschappelijk Onderzoek, die hiertoe door de Faculteitsraad werd gemachtigd.

Ik heb de eer u mede te delen dat de kandidatuur van Dr. Ole De Backer (cardiologie - UZ Gent), werd weerhouden. Het curriculum vitae en het voorgelegde project van de kandidaat zijn bijgevoegd.
Dr. Bruno Lapauw (endocrinologie - UZ Gent) werd tweede geklasseerd.

Mag ik u vriendelijk verzoeken dit voorstel van de Faculteit Geneeskunde en Gezondheidswetenschappen van de Universiteit Gent aan de Raad van Beheer van de Stichting te willen voorleggen.

Met de meeste hoogachting

Prof. Dr. G. Vanderstraeten
Decaan

cc. Prof. Dr. C. Cuvelier, voorzitter commissie wetenschappelijk onderzoek

OLE DE BACKER

Dijkstraat 26, B-9140 Temse, Belgium • Phone: +32-472-87 18 12 • E-mail: Ole.Debacker@UGent.be

WORK EXPERIENCE

Medical Residency – Cardiology, Universitair Ziekenhuis, Ghent, Belgium **2010-Present**

- Worked in the ambulatory, critical care unit (CCU), echocardiography unit and catheterization/EP labs. Technical procedures/skills ~ 1600 transthoracic echocardiography, 100 transoesophageal echocardiography, 300 diagnostic coronarography, 90 percutaneous coronary intervention (second operator), 30 diagnostic EP study, 30 device-implantation, 4 pericardial puncture – *temporary list January 2012.*
- Coordinated a pharmaco-economic study with vernakalant (Brinavess) in collaboration with MSD.
- Presentation at the Annual Scientific Meeting of the Belgian Society of Cardiology – February 2011
- Cardiology Review Course 2012 – Mayo Clinic & British Cardiovascular Society (UK)

Medical Residency – Cardiology, AZ Sint-Jan Hospital AV, Bruges, Belgium **2009-2010**

- Worked in the ambulatory, critical care unit (CCU), emergency department (ER), echocardiography unit, and catheterization labs. Technical procedures/skills ~ 1200 transthoracic echocardiography, 200 transoesophageal echocardiography, 200 diagnostic coronarography, 10 pericardial puncture.
- Advanced Course in Transthoracic Echocardiography (AMC, the Netherlands), Advanced Course in Transoesophageal Echocardiography (VUB, Belgium)

Lecturer/Teaching and research assistant, School of Medicine & School of Pharmaceutical Sciences, Ghent University, Belgium **2008-Present**

- Advised and supervised PhD and (bio)medical science students – participated at monthly Research Meetings
- Lecturer in Cardiovascular Pharmacology at Faculty of Medicine & Health Sciences and Faculty of Pharmaceutical Sciences, Ghent University (2008-2011).

Medical Residency - Internal Medicine, AZ Sint-Jan Hospital AV, Bruges, Belgium **2004-2005**

- Clinical work at the Department of Internal Medicine (Cardiology, Hepatogastroenterology, and Geriatrics) and Emergency Care Unit

EDUCATION

Ph. D. PHARMACOLOGY, Heymans Institute of Pharmacology, Ghent, Belgium **2005-2009**

- ***PhD thesis:*** 'Heme oxygenase in the GI tract: physiological role & therapeutic possibilities'
- Established research collaboration with other departments at UGhent (Molecular Biology, Pharmacy, VIB), universities (INSERM-Paris, IIT-Genova) and pharmaceutical companies (HemoCORM, Shire-Movetis)
- ***Clinical Pharmacology Certification*** - Nederlandse Vereniging voor Klinische Farmacologie & Biofarmacie, UMC St Radboud Nijmegen, the Netherlands – will be obtained in 2012.
- ***Honors:*** Research Grant from Research Flanders Foundation (FWO) – doctoral mandate

MASTER IN BUSINESS ADMINISTRATION, Vlerick Management School, Belgium **2006-2008**

- ***Honors:*** graduated with distinction, ECTS-credits: grade A - top 10% of students
- ***Thesis:*** 'Analysis of the Veterinary Pharmaceutical Industry in Central- and Eastern Europe – M&A opportunity analysis'. Co-authors: Prof. Dr. L. Verbeke, S. Sabbe (Omega Pharma), C. Cardon (Ecuphar)

DOCTOR OF MEDICINE (MD), Ghent University, Belgium **1997-2004**

- ***Honors:*** graduated with great distinction, ECTS-credits: grade A - top 5% of students
- ***Post-graduate degrees:*** *Experimental Cardiovascular Pharmacology (Aarhus Univ, Denmark), Laboratory Animal Science (UGhent, Belgium), Advanced course in Electrocardiography (UGhent, Belgium)*

LANGUAGE SKILLS AND INTERESTS

Languages	Dutch (native), English (fluent), French (fluent), Danish (moderate), German (basic)
Interests	Travelling, Architecture, Modern Art, Sports (soccer, athletics), Technology (computer)
Professional Memberships	Certificate-holder of Good Clinical Practice (GCP-ICH) accreditation – Maastricht University Member of the Belgian Society of Basic and Clinical Physiology & Pharmacology (since 2010) Member of the Dutch Society of Clinical Pharmacology & Biopharmacy (since 2011)

LIST OF PUBLICATIONS

De Backer O, Leclere P, Lefebvre RA. Pharmacological characterization of pre- and postsynaptic prostanoid receptors in pig gastric fundus. *Neuropharmacology* 2003;45:684-90.

De Backer O, Colpaert EE, Lefebvre RA. Influence of PEG-SOD and combined depletion and repletion of antioxidants on nitrergic relaxation in the pig gastric fundus. *Eur J Pharmacol* 2004;486:223-232.

De Backer O, Tavernier R, De Sutter J. Is er nog een toekomst voor digoxine in de 21ste eeuw? *Tijdschrift voor Geneeskunde* 2005;61:879-890.

De Backer O, Lefebvre RA. Mechanisms of relaxation by carbon monoxide-releasing molecule-2 in murine gastric fundus and jejunum. *Eur J Pharmacol* 2007;572:197-206.

De Backer O, Lefebvre RA. Is there a role for imatinib in inflammatory bowel disease? *Inflamm Bowel Dis* 2008;14:579-581.

De Backer O, Blanckaert B, Leybaert L, Lefebvre RA. A novel method for the evaluation of intestinal transit and contractility in mice using fluorescence imaging and spatiotemporal motility mapping. *Neurogastroenterol Motil* 2008;20:700-707.

De Backer O, Lefebvre RA. Investigation of a possible interaction between the heme oxygenase/ biliverdin reductase and nitric oxide synthase pathway in murine gastric fundus and jejunum. *Eur J Pharmacol* 2008;590:369-376.

De Backer O, Elinck E, Sips P, Buys E, Brouckaert P, Lefebvre RA. Role of the soluble guanylyl cyclase alpha(1)/alpha (2) subunits in the relaxant effect of CO and CORM-2 in murine gastric fundus. *Naunyn Schmiedebergs Arch Pharmacol* 2008;378:493-502.

De Backer O, Elinck E, Blanckaert B, Leybaert L, Motterlini R, Lefebvre RA. Water-soluble CO-releasing molecules reduce the development of postoperative ileus via modulation of MAPK/HO-1 signalling and reduction of oxidative stress. *Gut* 2009;58:347-356.

De Backer O, Elinck E, Priem E, Leybaert L, Lefebvre RA. Peroxisome proliferator-activated receptor gamma activation alleviates postoperative ileus in mice by inhibition of Egr-1 expression and its downstream target genes. *J Pharmacol Exp Ther* 2009;331:496-503.

Kruse V, Rottey S, De Backer O, Van Belle S, Cocquyt V, Denys H. PARP inhibitors in oncology: a new synthetic lethal approach to cancer therapy. *Acta Clin Belg* 2011;66:2-10.

Debonnaire P, De Backer O, De Geeter F, Delanote J, Vandekerckhove Y, Muyldermans L. Multimodality imaging of cardiac involvement in neurofibromatosis. *J Am Coll Cardiol Img* 2011;57: accepted - in press.

De Backer O, Vandekerckhove Y. Evidence-based selection of contrast media in interventional cardiology: implications of the updated guidelines. *Acta Cardiol* 2011;66(2):141-143.

De Backer O, Debonnaire P, Missault L, Muyldermans L. Tako-Tsubo cardiomyopathy with left ventricular outflow tract (LVOT) obstruction: case report and review of the literature. *Acta Clin Belg* 2011;66(4):298-301.

Babu D, De Backer O, Soenen S, Raemdonck K, Leclercq G, Motterlini R, Lefebvre RA. Influence of CO-releasing molecules on TNF-alpha-induced oxidative stress and apoptosis in murine Mode-K intestinal epithelial cells. *Biochem Pharmacol* – under revision.

De Backer O, Babu D, Timmermans F, Lefebvre RA. The role of Nrf-2 in the cardiovascular system: a review - in progress.

Application – Horlait-Dapsens Foundation – Ole De Backer

Discipline:	Interventional Cardiology
Host institution:	Rigshospitalet - Copenhagen University Hospital Blegdamsvej 9 2100 Kobenhavn Ø Denmark
Supervisor(s):	Prof. Dr. J. Kastrup - Dr. E. Jorgensen
Period:	1.10.2012 – 30.09.2013

The **Heart Centre** at **Rigshospitalet** offers advanced training programs for cardiology, cardiothoracic surgery, vascular medicine, anesthesia and research. The large number and complexity of patients provides an ideal learning environment for specialized cardiovascular care – which includes diagnostic and interventional catheterisation procedures (including a 24h service of primary percutaneous coronary intervention (PCI) for acute myocardial infarction), echocardiography, cardiac computerised tomography, cardiac magnetic resonance imaging, (non)-invasive stress tests, electrophysiological procedures (ablations), pacemaker insertions (including implantable cardiac defibrillators and biventricular pacemakers), open-heart surgery (bypass procedures and valve surgery), surgery for congenital heart disease, heart and lung transplants and surgery for atrial fibrillation. As a unique feature, the Heart Centre has intensive care facilities designed for the treatment of severe acute heart failure with treatment options ranging from intensive medical care to implantation of various types of mechanical circulatory assist devices.

Clinical training program fellowship

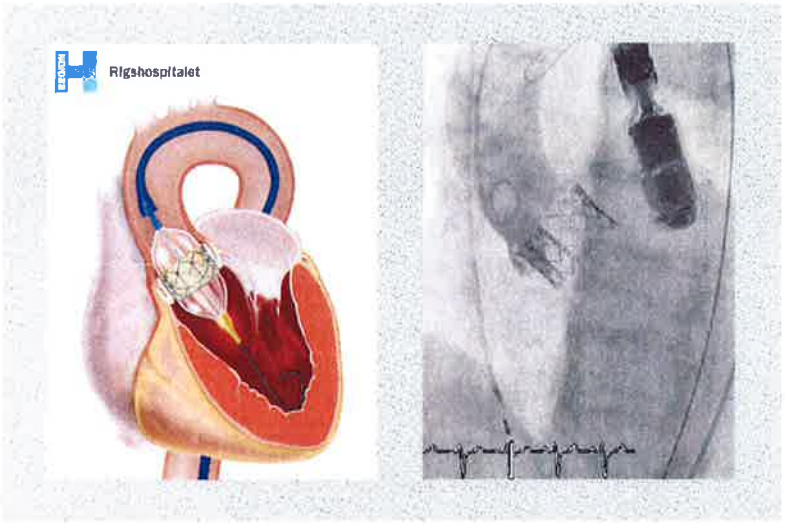
A one-year fellowship training program in **Interventional Cardiology** at The Heart Centre, Rigshospitalet, Copenhagen (Denmark) – approved by the European Society of Cardiology (ESC) and the European Association of Percutaneous Cardiovascular Intervention (EAPCI) – will include:

1. **Diagnostic angiography** – more than 8400 diagnostic coronary angiographies are performed in the department per year. Activities also include teleconferences on complex cases with 3 referring centers, performing approximately 9600 diagnostic angiographies per year. Intracoronary hemodynamic evaluation with advanced techniques such as fractional flow reserve (**FFR**), intravascular ultrasound (**IVUS**) and optical coherence tomography (**OCT**) is used routinely in relation to PCI and in more than 500 diagnostic procedures per year.

2. **Hemodynamic evaluation** of patients with all types of heart failure. The department performs around 600 right-sided catheterizations and approximately 450 myocardial biopsies per year. The use of hemodynamic assist devices – such as intra-aortic balloon pump (IABP) and percutaneous ventricular assist devices (PVAD, Impella) – is common for cardiogenic shock procedures.

3. **Percutaneous coronary interventions** (PCI) in stable and unstable coronary syndromes – including primary PCI, bifurcation PCI and left main PCI. The department performs more than 3000 PCIs per year. All primary PCIs for ST-elevation myocardial infarction (STEMI) in Eastern Denmark (inhabitants 2.6 mill) is centralized to our department, since June 1st 2011. Expected number of primary PCIs for our department in 2012 is more than 960 procedures. *Addendum: a new software tool to facilitate and optimize bifurcation PCI will be developed in collaboration with MEDISIP (department of Electronics and Information Systems, Faculty of Engineering, Ghent University).*

4. **Percutaneous treatment of valvular heart disease**. The department currently performs 5 to 10 valve procedures per week, including the Transcatheter Aortic Valve Implantation (**TAVI**) and percutaneous mitral valve repair using the **Mitraclip** system. The percutaneous valve program is in development and the number of procedures will steadily increase in 2012. Training will include a 4 month period of hands-on training, supervised by Dr Olaf Franzen and Dr Lars Sondergaard, having a total experience of 400 percutaneous aortic, mitral and pulmonary valve procedures.



TAVI-procedure

Mitraclip

5. The fellowship program will also offer opportunities to follow the departments programs in percutaneous interventions in grown up congenital heart disease, interventional regenerative medicine, hypertrophic cardiomyopathy and experimental valve procedures in patients and animals.

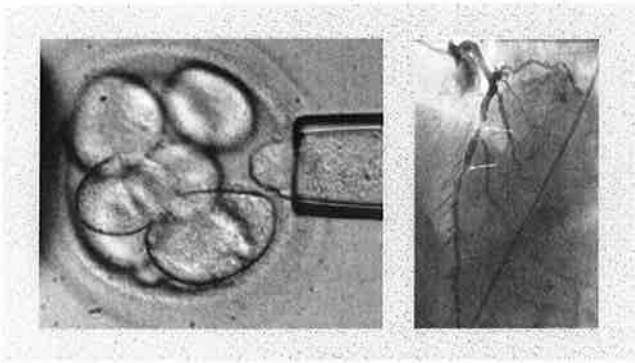
Research program fellowship

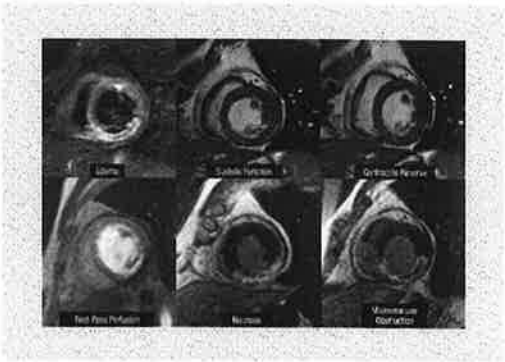
The clinical research program will comprise three new promising fields within clinical cardiology, ie. cardiac magnetic resonance imaging (MRI), stem cell therapy and cardiac biomarkers.

1. **Magnetic resonance imaging** (MRI) evaluation of patients treated with intra-coronary stem cells after primary STEMI-PCI – responsible will be Prof. Dr. Jens Kastrup (primary investigator - BAMI trial).

   The clinical consequence of the increasing incidence of coronary artery disease is a growing problem worldwide and ischemic heart disease remains the most common cause of death and a major cause of hospital admissions in industrialised countries. Early treatment with stabilizing drugs and mechanical revascularization by PCI or coronary by-pass surgery has significantly reduced mortality. However, despite the use of full conventional treatment – including ACE inhibitors, beta-blockers, aldosterone inhibitors and diuretics – post-infarction mortality rates are still high and re-hospitalisation for worsening heart failure occurs at a rate of 6–8 % per year. A major reason for this high morbidity and mortality is that the human heart has an inadequate regenerative response to myocardial necrosis following AMI – cell death from the ischemic damage can lead to progressive ventricular dilation and dysfunction through the processes of ventricular matrix remodeling. It has, therefore, been a challenge to find new treatment modalities that aim to reduce and repair myocardial damage and improve blood supply to the myocardium in the ischemic heart. Treatment with stem cells – which potentially have the capacity to regenerate damaged myocardium – is a relatively new approach.

Four main Phase I/II clinical trials using bone marrow mononuclear cells (**BMNC**) have been published so far with positive findings. To clarify whether BMNC actually have a place in the treatment of AMI, the **BAMI trial** has been designed. It is a multinational, multi-centre, randomized, controlled, open-label parallel group Phase III study. A total of 3000 patients with AMI suffering from lack of contractile recovery after successful reperfusion therapy will be randomized to either intra-coronary infusion of BMNC *or* a control group. The primary endpoint is death within a 2 years follow-up period.





The Heart Centre of Rigshospitalet, Copenhagen (Denmark) has a long tradition for stem cell therapy in patients with ischemic heart disease and in evaluating the effect of new treatment modalities in primary PCI by MRI. During his fellowship, Dr. Ole De Backer will be responsible for a research project, which is a sub-study of the BAMI trial. He will be trained in performing MRI evaluation of left ventricular function in patients with AMI. The aim of the study is to investigate the effect of BMNC therapy on left ventricular morphology and function – as assessed by left ventricular ejection fraction, regional wall-thickness and wall thickening, late enhancement images for scar-tissue and area of risk analyses – from baseline to 6 months follow-up.

2. Biomarkers have gained increasing significance in clinical cardiology during the last two decades. Laboratory parameters play an important role in the diagnosis of acute myocardial necrosis, as well as in the management of patients with congestive heart failure. Some markers, e.g. natriuretic peptides, have been introduced into clinical practice, but a growing number of novel markers is under investigation. Recent evidence indicates that some members of the **transforming growth factor (TGF)-ß superfamily** – such as growth differentiation factor (GDF)-15 and endoglin/CD-105 – may be useful as non-invasive parameters of LV filling pressures in heart failure.

   As LV filling pressure at rest has been shown to correlate with exercise capacity and predict symptomatic status in severe aortic stenosis (Dalsgaard et al., 2010), we assume that biomarkers reflecting LV filling pressure may contribute to a better identification of **patients** with **moderate/severe aortic stenosis** who are **'at risk'** and who should be referred for surgical aortic valve replacement. In order to investigate this hypothesis, the following parameters will be measured – invasively measured pulmonary capillary wedge pressure (PCWP) and/or left ventricular end-diastolic pressure (LVEDP); echocardiographic parameters (E/e', LA volume); and the cardiac biomarkers NT-pro-BNP, GDF-15, TGF-ß1/2/3, and endoglin/CD-105 - as measured by ELISA.

   In multivariate analysis, we will investigate whether 1/ biomarkers of the TGF-ß superfamily correlate with invasively measured PCWP and/or LVEDP, NT-proBNP levels and echocardiographic parameters representing LV filling status; and 2/ some of the biomarkers are associated with exercise capacity (as measured by a multistage symptom-limited cycle exercise test) and might be capable of predicting symptomatic status of the patient and, hence, identify patients with aortic stenosis 'at risk'.

Gent, 24 januari 2012

Betreft: applicatie voor de specialisatie-beurs Horlait-Dapsens – Dr. Ole De Backer

Geachte,

met dit schrijven wens ik te bevestigen dat Dr Ole De Backer (° 06.06.1979) op 30.09.2012 zijn specialisatie-opleiding Cardiologie zal vervolledigen in ons Hartcentrum – UZ Gent. Als assistent in specialisatie-opleiding (ASO) heeft hij de voorbije jaren bewezen over de nodige capaciteiten te beschikken om in de toekomst een academische carrière uit te bouwen.

Gezien zijn interesse in de Interventionele Cardiologie steunen wij Dr Ole De Backer volledig in de keuze om zijn opleiding Interventionele Cardiologie (Clinical & Research Fellowship) aan te vatten in het Heart Centre, Rigshospitalet - Copenhagen University Hospital (Denmark) van 01.10.2012 tem. 30.09.2013.

Na het beëindigen van zijn Fellowship Interventionele Cardiologie eind 2014, zou Dr Ole De Backer een absolute meerwaarde kunnen betekenen voor onze dienst Invasieve Cardiologie. Met dit schrijven wens ik dan ook de applicatie van Dr De Backer voor de specialisatie-beurs Horlait-Dapsens te ondersteunen.

Dr Michel De Pauw
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Universitair Ziekenhuis Gent
De Pintelaan 185
B-9000 Gent
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E-mail: michel.depauw@UGent.be

Copenhagen, january 17th 2012

Concerning: Clinical and Research Fellowship

Dear Madam/Sir,

With this writing, I declare that Dr Ole De Backer (Belgium) has been offered a Clinical and Research Fellowship at the Heart Centre, Rigshospitalet – Copenhagen University Hospital, Blegdamsvej 9, 2100 Copenhagen Ø (Denmark) from October 1st 2012 until September 30th 2013.

For the clinical training and research programme – see attached file.

Jens Kastrup MD, DMSc, FESC, Professor
Director of Angiogenesis Research Program
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