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Vrije Universiteit Brussel

FACULTEIT GENEESKUNDE EN
FARMACIE

Doctoraat in de Medische Wetenschappen

Academiejaar 2009-2010

UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Léa Olive TCHOUATE GAINKAM

woensdag 7 juli 2010

U wordt vriendelijk uitgenodigd op de openbare verdediging van het proefschrift van

Léa Olive TCHOUATE GAINKAM

'Molecular Imaging of Epidermal Growth Factor Receptor using Nanobodies'

Situering van het proefschrift

Dysregulation of the epidermal growth factor receptor (EGFR) is common in cancers of epithelial origin and correlates with poor prognosis of patients. Therefore early and noninvasive detection of EGFR can select or predict patients who might benefit from EGFR inhibitors. In this PhD project, we have characterized technetium-99m (^{99m}Tc) labeled Nanobodies as probes for molecular imaging of EGFR. Nanobodies are single domain antigen-binding fragments derived from Camelidae heavy-chain antibodies. ^{99m}Tc -labeled Nanobodies are very stable and bind to EGFR with high specificity and affinity in the nanomolar range. Nanobody uptake in the tumor correlates with EGFR expression in vivo. We have selected 7C12 Nanobody as the lead compound for noninvasive imaging of EGFR. This probe has fast pharmacokinetics and can provide good tumor visualization as early as one hour post injection. Furthermore we showed that ^{99m}Tc -7C12 uptake in the tumor correlates with cell viability and can be used to monitor response to erlotinib.

Curriculum Vitae

Léa Olive TCHOUATE GAINKAM was born in Cameroon in 1974. She graduated in biochemistry in 2000 at the University of Dschang in Cameroon. She came in Belgium in September 2002 and found interest in medical research. She decided to register for the 'Master Program in Medical and Pharmaceutical Research' of the Vrije Universiteit Brussel in 2003 where she graduated in September 2005 with distinction. During her master training she decided to focus on cancer research and particularly in the molecular imaging field. She started her PhD project in October 2005 at the *In vivo* Cellular and Molecular Imaging laboratory of the Faculty of Medicine and Pharmacy of the Vrije Universiteit Brussel. Her research has contributed to 7 peer-reviewed publications in international journals of which she is first author of 3. Since December 2009, she is working as a research fellow at the Center for Microscopy and Molecular Imaging of the Université Libre de Bruxelles.

Op **woensdag 7 juli 2010** om **17 uur**
in auditorium **P. Brouwer** van de
Faculteit Geneeskunde & Farmacie
Laarbeeklaan 103, 1090 Brussel