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FACULTEIT GENEESKUNDE EN FARMACIE

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UITNODIGING

Voor de openbare verdediging van het
doctoraatsproefschrift van

Ilse VERMEULEN

Donderdag 28 juni 2012

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

Ilse VERMEULEN

'Refining the diagnostic armamentarium for classification and prediction of type 1 diabetes'

Op **donderdag 28 juni 2012** om **17 uur** in auditorium **Brouwer** van de Faculteit Geneeskunde & Farmacie Laarbeeklaan 103, 1090 Brussel

Situering van het proefschrift

Type 1 diabetes remains to date an incurable disease. A major focus of investigation is to preserve β -cell function or – preferably – to arrest the immune destruction before clinical onset to delay or prevent clinical manifestation. To effectively accomplish this, correct classification of type 1 diabetic patients and identification of individuals at risk is required. Therefore, much effort has been invested in identifying genetic, immunologic and metabolic risk predictors.

This work aimed to refine classification and prediction of type 1 diabetes by expanding and/or optimizing the diagnostic clinical-biological armamentarium. It was shown that measurement of the recently described autoantibodies against zinc transporter 8 (ZnT8) could usefully complement conventional autoantibody assays for classification of recent-onset patients. Before onset, our findings were translated into a prediction strategy that identifies relatives with autoantibodies against ZnT8 or against IA-2 – another diabetes autoantigen – as having the highest antibody-inferred risk of diabetes. A longitudinal study of antibody status revealed that in relatives diabetes autoantibodies do not only develop in childhood, but also frequently in adolescence and early adulthood. This warrants regular reassessment of antibody-inferred risk of diabetes up to 40 years of age. Finally, a novel method for the simultaneous measurement of proinsulin and C-peptide was validated to improve the precision of their ratio, which represents an independent predictor of β -cell dysfuntion in risk groups.

Curriculum Vitae

Ilse Vermeulen was born on May 6, 1981 in Lier, Belgium. In 1999 she started the study of Bio-engineer at the Vrije Universiteit Brussel (VUB) under the program of 'Topsport & Studie' to combine her studies with her (international) swimming career. Her Master thesis, entitled 'Influence of the in vitro stability of camel single-chain antibody fragments on their intracellular expression in mammalian cells' was carried out at the Department of Cellular and Molecular Immunology (CMIM) at the VUB under the promotorship of Prof. Dr. S. Muyldermans. In 2004, she graduated with distinction as Bio-engineer in Medical Cell and Gene Biotechnology.

In 2005, she started a PhD in Medical Sciences at the Diabetes Research Center – Department of Medical Biochemistry (MBIO) – under the promotorship of Prof. Dr. F. Gorus. During her PhD, she assisted in the practical courses of Chemistry, Biomedical Chemistry and Biochemistry, and was co-promotor of 1 Master thesis in Pharmaceutical Sciences and of 1 Master thesis in Medical Sciences. She is first author of 3 publications in international peer-reviewed journals as well as co-author of 5 other publications. In 2011 she was nominated for the Sanofi-Aventis Award in Diabetes for a poster presentation at the annual meeting of the European Association for the Study of Diabetes (EASD) in Stockholm and in February 2012, her latest publication in Diabetologia got highlighted in the 'Up front'–section of the journal.