

Curriculum Vitae

Jimmy Borloo

Wypenstalstraat 1
9450 Haaltert
East-Flanders, Belgium

Tel.: +32 (0)476 80 89 90
e-mail: jimmyborloo@hotmail.com

Personal*Date and place of birth*

March 8th, 1980 – Zottegem (Belgium)

Nationality

Belgian

Languages

Dutch (Native language)
English (Proficient - both written and spoken)
French (Fluent - both written and spoken)
German (Notions)
Spanish (Notions)
Portuguese (Notions)

Driver's licence

Type B

Education

2003 - 2007

Doctor (PhD) in Sciences: Biochemistry (*magna cum laude*)

Laboratory for Protein Biochemistry and Protein Engineering

Ghent University

Promoters: Prof. J. Van Beeumen, Ph.D. and Prof. B. Devreese, Ph.D.

2002 - 2003

Master of Sciences (MSc.) in Molecular Medical Biotechnology (*great distinction*)

Ghent University

1998 - 2002

Industrial Engineer (MSc.): Biotechnology (*distinction*)

Hogeschool Gent

1992 - 1998

Latin - Industrial Sciences (8h mathematics programme)

K.T.A. Herzele

Experience

February 2013 – Present

Senior Scientist – Biochemistry & Analytics

Oxyrane N.V. (Belgium)

Department: Biochemistry & Analytics

Focus on: protein structure; protein stability (physical and chemical); enzyme kinetics; protein formulation (liquid vs. lyophilized); formulation optimization; protein interaction analysis; contact person for external companies; outsourcing spokesperson; technology scouting; reporting (from team-level up to board-level); presenting internally and externally; reviewing; supervision; quality assurance; project management.

January 2011 – February 2013

Post-Doctoral Scientist

Laboratory for Parasitology

Faculty of Veterinary Sciences

Ghent University - Merelbeke (Ghent)

Focus on: parasitic nematode proteomics; protein characterization; protein crystallization; project funding and applications writing; PhD and MSc thesis supervision.

October 2007 – December 2010

Associate Scientist CMC

Ablynx N.V. - Zwijnaarde (Ghent)

Department: Chemistry & Manufacturing Control (Analytics subdivision)

Focus on: protein characterization and stability testing; introducing, optimizing and implementing new technologies; responsibility for the IWT research project "*Improving Nanobody® Drugability*".

October 2003 – September 2007**PhD student (IWT doctoral fellowship)**

Ghent University (Ghent)

Laboratory for Protein Biochemistry and Protein Engineering

Department: Biochemistry, Physiology and Microbiology

Promotor: Prof. J. Van Beeumen, Ph.D.

Co-promotor: Prof. B. Devreese, Ph.D.

Thesis title: "Dissimilatory Metal Reduction by Shewanella oneidensis MR-1: Towards the Unravelling of a Unique Multi-Component Electron Transport Chain"
(PhD obtained: September 18th, 2007)

February 2002 – June 2003**Master-after-Master thesis student**

University Hospital, Ghent

Department: Medical Genetics (K5)

Promotor: Prof. F. Speleman, Ph.D.

Thesis title: "Expression analysis of candidate tumour suppressor genes in neuroblastoma"

August 2001 – May 2002**Master thesis student**

Innogenetics N.V.

Zwijnaarde (Ghent)

Department: Protein Purification

Subject: "Purification and particle formation of the HIV-1 GAG fusion protein"

Technical skills

(+++ : expert level ++ : good knowledge + : basic knowledge)

Genomics and DNA-level techniques:

DNA gel electrophoresis (++); Vector mapping (++); Cloning techniques (++);

Mutagenesis (++); (Quantitative/Real-Time) PCR techniques (++)

Proteomics and protein-level techniques:

Protein expression (++); Protein purification (SEC, RPC, IEX, IMAC, etc) (+++);

1-dimensional protein gel electrophoresis (+++); 2-dimensional protein gel

electrophoresis (+++); Blue-native gel electrophoresis (interactomics) (+++);

Western blotting (immunoblotting) (+++); Glycan staining (++); MALDI-TOF/TOF

mass spectrometry (++); (LC coupled) ESI Q-TOF mass spectrometry (++)

Protein characterization techniques:

Protein-protein interactions (two-hybrid / Biacore, Octet, etc) (+++ / ++); Enzymology (kinetics determination) (+++); Protein crystallization (++) ; Differential Scanning Calorimetry (+++); Fluorescence-based thermal shift assay (T_m determination) (+++); Fluorometry (intrinsic and extrinsic fluorescence) (+++); Circular dichroism (++) ; Chemical and thermal-induced protein unfolding (fluorometry) (+++); Protein unfolding thermodynamics (by fluorometry and DSC) (+++); Reversibility of protein unfolding (+++); Protein solubility determination (+++); Dynamic Light Scattering (+); Fluorescence microscopy (monitoring protein aggregation) (++) ; Protein particle counting and sizing (PAMAS particle counter) (++) ; Particle size measuring by light scattering (+); Fourier-transform IR spectroscopy (+); Rheology and viscosity measurements for protein solutions (+); UV-VIS (secondary derivative) spectroscopy (++) ; Protein formulation (+++); Long-term physical and chemical stability studies (+++)

Bioinformatics and relevant software:

Statistical data analysis (GraphPad Prism, Origin®) (+++); GPS mass spectrometry data analysis software (GE Healthcare) (+++); Swiss-PDB viewer (protein crystal structure viewing software) (+); BLAST alignment software (++) ; ExPASy Proteomics Server (+++); SignalP 3.0 (+++); ClustalW (+++); NetNGlyc 1.0 (+++); PyMol (++)

Miscellaneous:

Bacterial cell culturing; Optimizing enzymatic assays

Publications

(peer-reviewed in journals of the ISI Citation Index-SCI)

Vlaminck, J., **Borloo, J.**, Vercruysse, J., Geldhof, P. and Claerebout, E. (2015) Vaccination of calves against *Cooperia oncophora* with a double-domain activation-associated secreted protein reduces parasite egg output and pasture contamination. *Int J Parasitol* **45**(4): 209-13. (impact factor: 3.404)

Borloo, J., De Graef, J., Peelaers, I., Nguyen, D.L., Mitreva, M., Devreese, B., Hokke, C.H., Vercruysse, J., Claerebout, E. and Geldhof, P. (2013) In-depth Proteomic and Glycomic Analysis of the Adult-Stage *Cooperia oncophora* Excretome/Secretome. *J Proteome Res* **12**(9): 3900-3911. (impact factor: 5.056)

Van Meulder, F., Van Coppennolle, S., **Borloo, J.**, Rinaldi, M., Li, R., Chiers, K., Van den Broeck, W., Vercruysse, J., Claerebout, E. and Geldhof, P. (2013) Granule-exocytosis of granulysin and granzyme B as a potential key mechanism in vaccine-induced immunity in cattle against the nematode *Ostertagia ostertagi*. *Infection & Immunity* **81**(5): 1798-809. (impact factor: 4.074)

Borloo, J., Geldhof, P., Peelaers, I., Van Meulder, F., Ameloot, P., Callewaert, N., Vercruysse, J., Claerebout, E., Strelkov, S.V. and Weeks, S.D. (2013) Structure of *Ostertagia ostertagi* ASP-1: Insights Into Disulfide Mediated Cyclization and Dimerization. *Acta Cryst D* **69**: 493-503. (impact factor: 14.103)

Borloo, J., De Smet, L., Van Beeumen, J. J. and Devreese, B. (2011) Bacterial two-hybrid analysis of the *Shewanella oneidensis* MR-1 multi-component electron transfer pathway. *JIOMICS* 1(2): 260-267. (impact Factor: NA)

Brigé, A., Motte, B., **Borloo, J.**, Buysschaert, G., Devreese, B. and Van Beeumen, J. J. (2008) Bacterial decolorization of textile dyes is an extracellular process requiring a multi-component electron transfer pathway. *Microb Biotechnol* 1(1): 40-52. (impact factor: 2.523)

Borloo, J., Vergauwen, B., De Smet, L., Brigé, A., Motte, B., Devreese, B. and Van Beeumen, J. J. (2007) A kinetic approach to the dependence of dissimilatory metal reduction by *Shewanella oneidensis* MR-1 on the outer membrane cytochromes c OmcA and OmcB. *FEBS J* 274(14): 3728-3738. (impact factor: 3.330)

Borloo, J., De Smet, L., Vergauwen, B., Van Beeumen, J. J. and Devreese, B. (2007) A β -galactosidase based bacterial two-hybrid system enabling the detection of protein-protein interactions in the correct cellular environment. *J Proteome Res* 6(7):2587-95. (impact factor: 6.878)

Attended conferences and workshops

Coriolis Pharma conference: "Protein Formulation and Stability". Coriolis Pharma, Munich, Germany; October 17th, 2013.

Borloo, J., Claerebout, E., Peelaers, I., De Wilde, N., Casaert, S., Sarre, C., Mitreva, M., Devreese, B., Hokke, C.H., Vercruyse, J. and Geldhof, P. Oral Presentation: *Vaccine Potential of a Double-Domain ASP Isolated and Identified via In-Depth Analysis of the Adult-Stage Cooperia oncophora Excretome/Secretome*. Belgian Proteomics Association – BePAC Meeting; Ghent, Belgium; November 29th – 30th, 2012.

Borloo, J., Geldhof, P., Peelaers, I., Van Meulder, F., Ameloot, P., Callewaert, N., Vercruyse, J., Claerebout, E., Strelkov, S.V. and Weeks, S.D. Poster: *X-Ray Structure of Ostertagia ostertagi ASP-1 Provides Insights in Dimerization Mechanism and Protein Cyclization*. BSP-NVP Joint Meeting; Antwerp, Belgium; October 19th, 2012.

Borloo, J., Claerebout, E., Peelaers, I., De Wilde, N., Casaert, S., Sarre, C., Mitreva, M., Devreese, B., Hokke, C.H., Vercruyse, J. and Geldhof, P. Oral Presentation: *Vaccine Potential of a Double-Domain ASP Isolated and Identified via In-Depth Analysis of the Adult-Stage Cooperia oncophora Excretome/Secretome*. Paravac Meeting; Tunis, Tunisia; October 10th – 11th, 2012.

Workshop: "Biochromatography". Sercolab, Ghent, Belgium; January 17th, 2012.

BSP Autumn Symposium, "Proteomic Insights into Parasite Biology". University of Lancaster; Lancaster, UK; September 15th- 16th, 2011.

Borloo, J. Lecture: “The use of differential scanning calorimetry in assessing protein stability”. GE Healthcare userday; Eindhoven, The Netherlands; October 5th, 2010.

Workshop & Course: “Course in Analytical Chromatography”. Research Institute for Chromatography; Kortrijk, Belgium; January 19th – 21st, 2009.

Applications in BioCalorimetry. MicroCal; Heidelberg, Germany; July 7th-10th, 2008.

Workshop & Course: “Use of fluorescence spectroscopy in the study of drugs, proteins and membranes”. University of Geneva; Geneva, Switzerland; December 5th-7th, 2007.

Borloo, J., De Smet, L., Vergauwen, B., Devreese, B. and Van Beeumen, J.J. Plenary lecture: Elucidation of the electron transport chain and enzymatic characterization of outer membrane c-type cytochromes OmcA and OmcB used by *Shewanella oneidensis* MR-1 during metal reduction. International Conference on Enzyme Technology ‘Relatenz 2007’; Varadero, Matanzas, Cuba; June 20th – 23rd, 2007.

Borloo, J., De Smet, L., Vergauwen, B., Devreese, B. and Van Beeumen, J.J. Poster: A novel bacterial two-hybrid system for studying protein-protein interactions regardless their cellular localization. Knowledge For Growth Conference; Ghent, Belgium; June 8th, 2007.

Borloo, J., De Smet, L., Vergauwen, B., Devreese, B. and Van Beeumen, J.J. Poster: A novel bacterial two-hybrid system for studying protein-protein interactions regardless their cellular localization. Gordon Research Conference on Bacterial Cell Surfaces; New London, NH, USA; June 25th – July 1st, 2006.

Borloo, J., De Smet, L., Vergauwen, B., Devreese, B. and Van Beeumen, J.J. Poster: A modified method for identifying protein-protein interactions in bacteria. 30th FEBS Congress and 9th IUBMB Conference; Budapest, Hungary; July 2nd – 7th, 2005.

Master thesis co-promotor

Berten Jacobs

2012

Ghent University, Ghent

Laboratory for Parasitology

Department: Virology, Parasitology and Immunology

Subject: “Helminth proteomics”

Jonas Defoort

2011

Ghent University, Ghent

Laboratory for Parasitology

Department: Virology, Parasitology and Immunology

Subject: “Ostertagia ostertagi functional proteomics”

Sarah De Keulenaer

2005-2006

Ghent University, Ghent

Laboratory of Protein Biochemistry and Protein Engineering

Department: Biochemistry, Physiology and Microbiology

Subject: "Development of a bacterial two-hybrid system for studying protein-protein interactions in the correct cellular environment"

Master student's thesis reading commission member:**Anno 2011:**

Anaïs Bekaert

"Structural studies of mouse CSF-1 (mCSF-1) and its complex with the viral oncoprotein BARF1"

Annelies Van Raemdonck

"Structural studies of human and mouse CSF-1 in complex with their cognate receptors"

Anno 2010:

To be completed

Extra Courses

Zythologist (beer connoisseur) (2014-2015, expected);

Webdesign and –programming in HTML;

Brewing technologies (2002);

Teacher's course (completed 1st year of a two-year programme).