

Jean-Marc CROWET

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August 2, 1980
Single
Belgian
Current driving license, personal vehicle

Biophysics, bioinformatics and molecular modelling**PROFESSIONAL EXPERIENCE**

Experience in research

- 2011-14 **Interuniversity Attraction Poles project iPROS (IAP 7/44)**
CBMN, Gembloux Agro Bio-Tech, ULg, Gembloux, Belgium
Studies: MD study of the membrane interactions of cyclic antimicrobial peptides, lipopeptides and glycolipides
CG study of an amphiphilic beta peptide and TM multimerisation
Project Redaction: The project to build a PepLook web server has been accepted by the FNRS in 2012.
Review: for the European Journal of Medicinal Chemistry in 2013
Supervision: Master thesis on the micel formation of several surfactants in 2013
- 2008-10 **Interuniversity Attraction Poles project PROFUSA (IAP 6/19)**
CBMN, Gembloux Agro Bio-Tech, ULg, Gembloux, Belgium
Studies: *in silico* study of the interaction between CPPs (cell penetrating peptides) and siRNA
in silico study of the Thermomyces lanuginosa lipase in presence of tributyrilglycerol
Project Redaction: The Waléo project RAIDGBS has been accepted by the Walloon Region in 2009.
Supervision: Laboratory work of a technician
- 4/5-2010 **Erasmus Training Grant** at SBCB, Oxford University, Oxford, UK
Studies: Coarse grain molecular dynamic study of fusion peptides
- 2003-7 **FRIA Grant** for a PhD at CBMN, FSAGx, Gembloux, Belgium
Studies: *in vitro* and *in silico* study of amyloid proteins fragments
Project Redaction: The FIRST Post-Doc project OsiDock has been accepted by the Walloon Region in 2007.
Programmation: Writing of Epiros and several software interfaces in fortran for the spin off Biosiris
Writing of treatment softwares in VB6 for the lab spectrometers

Teaching experience

- Participation to the courses and practical work in bioinformatics and modelling addressed to the bioengineer students from 2009 to 2013
- Organisation and animation of “ateliers bioexplorateurs” designed to make discover the bioinformatics to undergraduate students in 2005, 2006 and 2007

SKILLS

- Computer skills**
- Operating Systems: Linux, Windows
 - Programmation in Python, BASH, PERL, FORTRAN, Visual Basic
 - Classical tools of bioinformatics (BLAST, HCA, PSIPRED, ...)
 - Molecular modelling (GROMACS, HyperChem, ...)
 - Molecular visualisation (PYMOL, VMD, ...)
- Experimental Methods**
- Materials: Spectrofluorimeter, spectrophotometer UV-VIS, infrared spectrometer (ATR-FTIR), spectropolarimeter for circular dichroism measurement (CD).
- Techniques: Liposomes preparation, phospholipids dosage, fusion and permeability of liposomes measurement, protein secondary structure determination.
- Languages**
- French: Mother tongue
English: B2
Nederlands: B1

EDUCATION

- 2003-08 **PhD in Agronomic Science and Biological Engineering**
Centre de Biophysique Moléculaire Numérique (CBMN)
Gembloux Agricultural University (FSAGx, Belgium)
Thesis subject: **Detection and characterization of tilted peptides in amyloid proteins**
Promoters: Pr. Robert Brasseur and Dr. Laurence Lins.
- 2003-04 **MSc in Agronomic Science and Biological Engineering**
Gembloux Agricultural University (FSAGx, Belgium)
Project: **Experimental study of the tilted peptide of α -synuclein**
Promoters: Pr. Robert Brasseur and Dr. Laurence Lins.
- 1998-03 **Engineer Degree in Chemistry and Bioindustries**
Gembloux Agricultural University (FSAGx, Belgium)
Project: **Contribution to the study of tilted peptides involved in transconformational phenomenon**
Promoters: Pr. Robert Brasseur and Dr. Laurence Lins.

PUBLICATIONS

- Deleu M., Crowet J.M., Nasir M.N., Lins L. *Complementary biophysical tools to investigate lipid specificity in the interaction between bioactive molecules and the plasma membrane: A review.* **Biochimica et Biophysica Acta – Biomembranes** 2014, 1838(12): 3171-90.
- Dony N., Crowet J.M., Joris B., Brasseur R., Lins L. *SAHBNET, an Accessible Surface-Based Elastic Network: An Application to Membrane Protein.* **International Journal of Molecular Sciences** 2013, 14(6): 11510-26.
- Uzureau P., Uzureau S., Lecordier L., Fontaine F., Tebabi P., Homble F., Grelard A., Zhendre V., Nolan D.P., Lins L., Crowet J.M., Pays A., Felu C., Poelvoorde P., Vanhollebeke B., Moestrup S.K., Lyngso J., Pedersen J.S., Mottram J.C., Dufourc E. J., Perez-Morga D, Pays E. *Mechanism of Trypanosoma brucei gambiense resistance to human serum.* **Nature** 2013, 501(7467): 430-4.
- Perraki A., Cacas J.L., Crowet J.M., Lins L., Castroviejo M., German-Retana S., Mongrand S., Raffaele S. *Plasma membrane localization of StREM1.3 Remorin is mediated by conformational changes in a novel C-terminal anchor and required for the restriction of PVX movement.* **Plant Physiology** 2012, 160(2): 624-37.
- Crowet J.M., Lins L., Deshayes S., Divita G., Morris M., Brasseur R., Thomas A. *Modeling of non-covalent complexes of the cell-penetrating peptide CADY and its siRNA cargo.* **Biochimica et Biophysica Acta** 2012, 1828(2): 499-509.
- Crowet J.M., Parton D.L., Hall B.A., Steinhauer S., Brasseur R., Lins L., Sansom M.S.P. *Multi-Scale Simulation of the Simian Immunodeficiency Virus Fusion Peptide.* **Journal of Physical Chemistry B** 2012, 116(46): 13713-21.
- Crowet J.M., Lins L., Deshayes S., Divita G., Morris M., Brasseur R., Thomas A. *Modeling of non-covalent complexes of the cell-penetrating peptide CADY and its siRNA cargo.* **European Biophysics Journal** 2013, 42(Suppl 1): S63. (Poster Abstract)
- Razafindralambo H., Blecker C., Mezdour S., Deroanne C., Crowet J.M., Brasseur R., Lins L., Paquot M. *Impacts of the Carbonyl Group Location of Ester Bond on Interfacial Properties of Sugar-Based Surfactants: Experimental and Computational Evidences.* **Journal of Physical Chemistry B** 2009, 113(26): 8872-7.
- Santini S., Crowet J.M., Thomas A., Paquot M., Vandenbol M., Thonart P., Wathelet J.P., Blecker C., Lognay G., Brasseur R., Lins L., Charloreaux B. *Study of Thermomyces lanuginosa lipase in presence of tributyrilglycerol and water.* **Biophysical Journal** 2009, 96(12): 4814-4825.
- Crowet J.M., Lins L., Dupiereux I., Elmoulaja B., Lorin A., Charloreaux B., Stroobant V., Heinen E., Brasseur R. *Tilted properties of the 67-78 fragment of alpha-synuclein are responsible for membrane destabilization and neurotoxicity.* **Proteins** 2007, 68(4): 936-947.
- Charloreaux B., Lorin A., Crowet J.M., Stroobant V., Lins L., Thomas A., Brasseur R. *The N-terminal 12 residue long peptide of HIV gp41 is the minimal peptide sufficient to induce significant T-cell-like membrane destabilization in vitro.* **Journal of Molecular Biology** 2006, 359(3): 597-609.

COMMUNICATIONS

Oral presentation

- DutchBiophysics 2014 (Veldhoven, Netherlands, September 29-30, 2014)
“Modeling of the cyclic lipodepsipeptide Pseudodesmin A self-assembly through molecular dynamic simulations” J. M. Crowet, D. Sinnaeve, K. Fehér, R. Brasseur, J. C. Martins, L. Lins
- Gordon Research Conferences: Computational Chemistry (West Dover, VT, USA, July 19-25, 2014)
“Modeling of the cyclic lipodepsipeptide Pseudodesmin A self-assembly through molecular dynamic simulations” J. M. Crowet, D. Sinnaeve, K. Fehér, R. Brasseur, J. C. Martins, L. Lins
- 2nd Belgian Peptide Group Meeting (Gent, Belgium, February 10-11, 2014)
“Molecular dynamic simulation of the cyclic lipodepsipeptide Pseudodesmin A self-assembly” J.M. Crowet, D. Sinnaeve, K. Fehér, R. Brasseur, J.C. Martins, L. Lins
- 16th GEM – 10th GERLI lipidomics meeting (Saint-Jean-Cap-Ferrat, France, November 11, 2013)
“SAHBNET, An Accessible Surface-Based Elastic Network to Insert a Protein in a Complex Lipid Membrane” Dony N., Crowet J.M., Joris B., Brasseur R., Lins L.
- NSBM Fall Meeting 2013 (Maastricht, Netherlands, October 25, 2013)
“Simulations of a beta amphiphilic peptide as potential surfactant of membrane proteins” Crowet J.M., Dony N., Deschamps A., Soumillion P., Brasseur R., Lins L.
- IAP 7/44 Meeting (Liège, Belgique, October 3, 2013)
“Molecular dynamic simulations of a beta amphiphilic peptide” Crowet J.M., Deschamps A., Soumillion P., Brasseur R., Lins L.
- IAP 6/19 Meeting (Liège, Belgium, January 27, 2009)
“PepLook Scale-Up: Prediction of protein structures” Crowet J.M., Lins L., Brasseur R.
- 5th Conference of the FNRS Structural Biology Contact Group (Liège, Belgium, September 12, 2003)
“Implication des peptides obliques dans la transconformation de protéines natives” Crowet J.M., Lins L., Brasseur R.

Poster

- Gordon Research Conferences: Computational Chemistry (West Dover, VT, USA, July 19-25, 2014)
“Modeling of the cyclic lipodepsipeptide Pseudodesmin A self-assembly through molecular dynamic simulations” Crowet J. M., D. Sinnaeve, K. Fehér, R. Brasseur, J. C. Martins, L. Lins
- 19th National Symposium on Applied Biological Sciences (Gembloux, Belgium, February 7, 2014)
“Simulations of a beta amphiphilic peptide as potential surfactant of membrane proteins” Crowet J.M., Dony N., Deschamps A., Soumillion P., Lins L.
- IAP 7/44 Meeting (Liège, Belgium, February 26, 2013)
“Prediction of membrane protein structures and TM interactions Rosetta and molecular dynamic studies” Crowet J.M., Dony N., Joris B., Brasseur R., Lins L.
- IAP 7/44 Meeting (Liège, Belgium, February 26, 2013)
“In silico study of antimicrobial cyclic peptides Sequence analysis, molecular modelling and multi-scale molecular dynamics” Crowet J.M., Soumillion P., Brasseur R., Lins L.
- 9th EBSA European Biophysics Congress (Lisbon, Portugal, July 13-17, 2013)
“Modeling of non-covalent complexes of the cell-penetrating peptide CADY and its siRNA cargo” Crowet J.M., Lins L., Deshayes S., Divita G., Morris M., Brasseur R., Thomas A.
- Faraday Discussion 161 : Lipid and Membranes Biophysics (London, UK, September 11-13, 2012)
“Replacing explicit water and lipids by implicit representation in molecular dynamics simulations” Steinhauer S., Crowet J.M., Lins L., Brasseur R.
- IAP 6/19 Meeting (Liège, Belgique, August 27, 2009)
“PepLook Scale-Up Prediction of protein structures” Crowet J.M., Lins L., Brasseur R.
- Conferences Jacques Monod (Aussois, France, April 25-29, 2009)
“Detection and characterization of tilted peptides in amyloid proteins” Crowet J.M., Lins L., Brasseur R.
- 8th International Conference AD/PD (Salzburg, Austria, March 14-18, 2007)
“Peculiar hydrophobic properties of the 67-78 fragment of α -synuclein are responsible for membrane destabilization and neurotoxicity” Crowet J.M., Lins L., Dupiereux I., Elmoualij B., Lorin A., Charlotheaux B., Stroobant V., Heinen E., Brasseur R.
- Young Scientists Day of the 194th Meeting of the Belgian Society of Biochemistry and Molecular Biology (Gembloux, Belgium, December 18, 2006)

“Peculiar hydrophobic properties of the 67-78 fragment of α -synuclein are responsible for membrane destabilization and neurotoxicity” Crowet J.M., Lins L., Dupiereux I., Elmoualij B., Lorin A., Charlotheaux B., Stroobant V., Heinen E., Brasseur R.

- Peptide Membrane Interaction (Namur, Belgium, October 9-12, 2004)
“The Presence and Potential Role of Tilted Peptides in Amyloidogenic Proteins” Crowet J.M., Lins L., Brasseur R.
- 4th Conference of the FNRS Structural Biology Contact Group (Gembloux, Belgium, May 23, 2003)
“Study of the potential role of tilted peptides in transconformation: Theoretical analysis of amyloidogenic proteins” Crowet J.M., Brasseur R., Thomas A., Lins L.

REFERENCES

Pr Brasseur Robert

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