

**Prof. Isabelle FOURNIER**

1973/11/24, married, 1 child

Full Professor, Distinguished (PRCE1), Honorary Junior Member of Institut Universitaire de France

*Laboratoire Protéomique, Réponse Inflammatoire et Spectrométrie de Masse,  
INSERM U1192 - Université de Lille*✉ Bât SN3, 1<sup>er</sup> étage, Université de Lille 1, F-59655 Villeneuve d'Ascq Cedex✉ [isabelle.fournier@univ-lille1.fr](mailto:isabelle.fournier@univ-lille1.fr), <http://www.laboratoire-prism.fr>**DIPLOMA**

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- 1995-1996** **M2 Spectroscopy & Organic Physicochemistry**, University Paris 6, Laboratoire de Chimie Structurale Organique & Biologique, CNRS-UMR 7613, Paris, France
- 1996-2000** **PhD, Speciality Spectroscopy & Organic Physicochemistry**, University Paris 6, Laboratoire Chimie Structurale Organique & Biologique, CNRS-UMR 7613, Paris, France
- 2005** **Habilitation**, Laboratoire de Neuroimmunologie des Annélides, FRE-CNRS 2933, University Lille 1, Lille, France

**PROFESSIONAL EXPERIENCE**

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- 2000-2001** **Postdoctorate** (05/2000-08/2001), Laboratoire "Instrumentelle Analytische Chemie", Pr. M. Karas, University J. W. Goethe de Frankfurt, Germany
- 2001-2002** **Postdoctorate** (09/2001-09/2002), Laboratoire de Neuroimmunologie des Annélides, CNRS UMR 8017, University Lille1, France
- 2002-2003** **Assistant Professor** (10/2002-01/2003), Laboratoire de Neuroimmunologie des Annélides, CNRS-UMR 8017, University Lille 1, France
- 2003-2009** **Associate Professor**, Laboratoire de Neuroimmunologie des Annélides, CNRS UMR 8017, University Lille 1, France
- 2009-2011** **Full Professor (PR2) CNU 68**, Laboratoire de Spectrométrie de Masse Biologique Fondamentale et Appliquée (FABMS) EA4550 University Lille 1
- 2011-2015** **Full Professor, 1<sup>st</sup> grade (PR1) CNU 68**, Laboratoire de Spectrométrie de Masse Biologique Fondamentale et Appliquée (FABMS) EA4550 University Lille 1
- Since 2015** **Full Professor, Distinguish grade (PRCE1) CNU 68**, Laboratoire Protéomique, Réponse Inflammatoire & Spectrométrie de Masse (PRISM) INSERM U1192 University Lille 1

**PRICES & DISTINCTIONS**

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- 2009-2014** Junior Member of Institut Universitaire de France
- Since 2004** Excellence Scientific Prime
- 2011** Great Price Special of Science, Agriculture and Art Society of Lille
- 2015** Best breakthrough innovation price by MATWIN International Board

**RESPONSABILITIES**

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- 2004-2015** **Group Leader** MALDI Imaging Team at Laboratoire de Spectrométrie de Masse Biologique Fondamentale & Appliquée, Université Lille 1. Starting Grant 2004 for team creation, AERES Notation A
- 2007-2008** **Member of Scientific Council** University Lille 1
- 2007-2009** **Nominated member CNU (National Committee of Universities)** section N°68
- 2009-2011** **Nominated member Parity Technique Committee (CTP)** University Lille 1
- 2010-2015** **Adjoin Director** of Laboratoire de Spectrométrie de Masse Biologique Fondamentale et Appliquée
- Since 2015** **Adjoin Director and Coordinator of the Technological Innovation Axis** of Laboratoire Protéomique, Réponse Inflammatoire et Spectrométrie de Masse (PRISM) INSERM U1192 University Lille 1

<b>2011-2013</b>	<b>Assistant Director</b> of Federative Research Institute IFR 147
<b>2011-2016</b>	<b>MC Member representing France</b> COST BM 1104: MALDI MSI, FP7
<b>2012-2014</b>	<b>Member of Scientific Council</b> University Lille 1
<b>Since 2012</b>	<b>Member of the Biology Department Council, University Lille 1</b>
<b>Since 2012</b>	<b>Coordinator Imaging Platform &amp; MC member</b> , SIRIC ONCOLILLE, Excellence Center of the National Institute of Cancer (INCA), Integrated Site for Research in Cancer (SIRIC)
<b>2016-</b>	<b>Member of Research Council</b> University Lille 1

## TEACHING RESPONSABILITES

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<b>2003-2009</b>	<b>Responsible Teaching Unit</b> in the Professional Master of Proteomics
<b>2005-2009</b>	<b>Responsible Teaching Unit</b> in the Research Master in Life Physico-chemistry
<b>2005-2009</b>	<b>Responsible Teaching Unit</b> in the IUP Genomic and Proteomic, M1, S2
<b>2009-</b>	<b>Responsible Teaching Unit</b> in the International Master Advanced Spectroscopy in Chemistry, M1, S2, Spectroscopy for life sciences
<b>2010-2015</b>	<b>Responsible Teaching Unit</b> , Master Biology & Biotechnology, Specialty Genomic & Proteomic, Proteomics, M2, S3, Mass Spectrometry & M2, S4, Training sessions
<b>2010-2015</b>	<b>Responsible Teaching Unit</b> , Master Biology & Biotechnology, Specialty Genomic & Proteomic, M1, S2, Proteome Analysis
<b>2010-2015</b>	<b>Responsible Teaching Unit</b> , Master Biology & Biotechnology, Specialty Health Biology, M1, S2, Proteins Structural Analysis
<b>Since 2015</b>	<b>Responsible of the M2 of Proteomics</b> , Master of Biotechnologies, University Lille 1
<b>Since 2015</b>	<b>Responsible of the Student Trainings (S4)</b> , M2 of Proteomics, Master of Biotechnologies, University Lille 1
<b>Since 2015</b>	<b>Responsible Teaching Unit</b> "Advanced Mass Spectrometry" (S3), M2 of Proteomics, Master of Biotechnologies, University Lille 1

## STUDENTS SUPERVISION

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- 15 PhD supervised since 2003 : 12 defended and 3 ongoing
- Students professional insertion: 2 Associate Professors, 1 Assistant Professor, 1 senior scientist, 2 engineers in companies (L'OREAL, IMABIOTECH), 1 engineer for academy, 1 engineer at Hospital, 1 CRO, 1 post-doctorate
- 10 PhD in co-direction and 2 in co-supervision, 5 international co-directions (Tunisia & Canada)
- 30 M2 supervised since 2003 including 8 medical residents

## SCIENTIFIC AKNOWLEDGMENT & EXPERTISES

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- ✓ Reviewer for international journals (in average 2/monthes)
- ✓ Expertise
  - France: Région Centre, ANRT, Région Ile de France, Canceropôle Ile de France, AERES, IDEX Paris, Région Aquitaine, SIRIC Brio
  - International: Belgium (ARC Wallonie, FNRS), UK (Cancer Research, BBSRC, MSS), Netherlands (Genomic Initiative), Germany (DFG), Poland (Polish Science Foundation), Canada (FRNTQ), EU (FET FP7 Programs, FET-OPEN H2020)
- ✓ Editorial of International Journals
  - Associated editor for *Journal of Clinical Bioinformatics* and *Journal of Integrated Omics*
- ✓ Treasurer of the French Society for Mass Spectrometry (09/2007-09/2008)
- ✓ Conferences organization
  - Scientific committee 25èmes Journées de la Société Française de Spectrométrie de Masse, Grenoble, 8-11 September (2008); Scientific Committee SMAP (Mass Spectrometry and Proteomic Analysis) 2009, Dijon, 14-17 September (2009); Organization of the Workshop of the COST BM 1104 "On Tissue Digestion Initiative"
- ✓ Conferences Chair
  - Annual Conference French Society for Electrophoresis and Proteomics Analysis (SFEAP) , Saint-Malo, 16-18 October, 2006 ; Conference Mass Spectrometry and Proteomic Analysis SMAP), Dijon, 14-17

September, 2009 ; Desorption 2010 Conference Seillac, 30 Mai- 3 June, 2010 ; Conference Mass Spectrometry and Proteomic Analysis SMAP) Avignon, 19-22 September 2011

## VALORISATION

- ✓ 9 international patents, 2 delivered in EU & US
- ✓ Co-funding IMABIOTECH Start-Up, [www.imabiotech.com](http://www.imabiotech.com) , (OSEO Price 2008, 2010, Nord Entreprendre & ISEG 2010)
- ✓ Awarded in 2015 by the Maturation Program MATWIN International Board (<http://www.matwin.org/> ) the « Best breakthrough innovation » price for the development of a novel MS based instrument for guided surgery and diagnosis

## GRANTS

Academic Grants				
Year	Funding Agency	PI	Project	Funding
2002	Research Medical Foundation (FRM)	I. Fournier	MALDI Imaging	12 k€
2004-2007	National Starting Grant ACI « Jeunes Chercheurs et jeunes Chercheuses », ACI JC4074	I. Fournier	Developments of peptides/proteins and transcripts MALDI-TOF MS Imaging of tissue sections and biopsies: MALDI Imager	85 k€
2005	CNRS Technological Transfer Action	I. Fournier	Technological Transfer to Bruker Daltonics	70 k€
2006-2008	National Institute of Cancer (INCA)	P. Ducoroy / I. Fournier	Biomolecules Imaging Mass Spectrometry in Cancer Research	120 k€
2007	CNRS-DPI	I. Fournier	Instrument MALDI-TOF/TOF for MALDI MS Imaging	70 k€
2007	CNRS- Biology Institute	I. Fournier	Instrument MALDI-TOF/TOF for MALDI MS Imaging	70 k€
2007	Biology Department, University of Lille	I. Fournier	Instrument MALDI-TOF/TOF for MALDI MS Imaging	30 k€
2008-2011	National Research Agency (ANR) Program Physic-Chemistry for Life	I. Fournier	BIOSPIM: Biomolecules Specific Imaging	260 k€
2009-2013	National Research Agency (ANR) Physic-Chemistry Interdisciplinary Program	G. Bolbach/ I. Fournier	FUN MALDI: Fundamental MALDI for Imaging Mass Spectrometry: Finding Solutions to Actual Limitations	356 k€
2010-2013	National Research Agency (ANR) Program PIRIBIO	J-P. Both	MASDA-EYE : Mass Spectrometry imaging Data Analysis in EYE	116 k€
2012-2013	ISAO (Internationale Stichting Alzheimer Onderzoek)	PI France, I. Fournier (involved countries: France-Netherlands-South Korea)	Mechanism of Oxidative Stress in Alzheimer's disease	150 k€
2012-2013	KORANET (International Collaboration Program EU-South Korea)	PI France, I. Fournier (involved countries: France-Netherlands-South Korea)	Epigenetic Modulation in Neurodegenerative Diseases : EPIMOD	100 k€
2010-2013	ARCIR/FEDER North Region	I. Fournier	Funding for a High Spectral Resolution MS instrument for	300 k€

			MALDI MS Imaging haute	
<b>2011</b>	University of Lille	I. Fournier	AP-MALDI ion source	20 k€
<b>2013-2015</b>	National Research Agency (ANR) – Young Investigator Program	C. Sabourault	Synbiotic interface between cnidarian and dinoflagellates: characterization of interaction mediators	75 k€
<b>2013</b>	University of Lille	I. Fournier / M. Ziskind	Funding of a OPO laser system for a novel instrument of in-vivo real-time analysis	40 k€
<b>2013-2017</b>	National Institute of Cancer (INCA) / National Institute of Health (INSERM)	I. Fournier	Funding of a high spectral resolution FTMS orbitrap instrument	250k€
<b>2013-2017</b>	National Institute of Cancer (INCA) / National Institute of Health (INSERM)	I. Fournier	Funding of an engineer personnel (5 years)	225k€
<b>2014</b>	National Research Agency (ANR) – Program Health and Well-Being	I. Fournier	Development of a novel noninvasive instrument for in-vivo real-time diagnosis by Mass Spectrometry: REALITY'MS	387 k€
<b>2015</b>	National Institute of Cancer (INCA) / National Institute of Health (INSERM) ProgramPhysiCancer	I. Fournier / M. Salzert	Development of a novel noninvasive instrument for in-vivo real-time diagnosis by Mass Spectrometry: REALITY'MS	460 k€
<b>Total Funding</b>				<b>3231 k€</b>

<b>Industrial Contracts</b>				
<b>Year</b>	<b>Company</b>	<b>PI</b>	<b>Project</b>	<b>Funding</b>
<b>2010-2011</b>	ISPEN Beaufort	I. Fournier	DMPK of drugs in preclinical phases studied by MALDI MS Imaging	70 k€
<b>2013-2016</b>	Pierre Fabre	I. Fournier	Molecular and organizational modifications of derma in course of intrinsic and photo-induced ageing	300 k€
<b>2013</b>	Pierre Fabre	I. Fournier	Proteomics of suction bulls liquid and roofs	20 k€
<b>2013</b>	Pierre Fabre	I. Fournier	Effects of Cumulated photo-induced ageing on skin	40 k€
<b>2014</b>	Pierre Fabre	I. Fournier	Proteomics analysis of lesions promoted by acne	40 k€
<b>2014</b>	Pierre Fabre	I. Fournier	Proteomics analysis of atopic dermatosis	30 k€
<b>2014</b>	Philip Morris	I. Fournier	MALDI MS Imaging of aortic archs of ApoE KO versus control of mice	41 k€
<b>2015</b>	Pierre Fabre	I. Fournier	Proteomics analysis of anti-aging cosmetic effect	40 k€
<b>2015</b>	Pierre Fabre	I. Fournier	Proteomics analysis of Follicular units during capillary transplantations	15 k€
<b>2015</b>	Philip Morris	I. Fournier	Lipidomics and Proteomics of aortic archs of ApoE KO versus control of mice	50 k€
<b>2016</b>	Pierre Fabre	I. Fournier	Proteomics of Capillary Aging in women using Follicular Unit Method (FUE)	90 k€
<b>Total Financements</b>				<b>715 k€</b>

## RESEARCH THEMATICS

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- 1995-2001** Fundamental of MALDI desorption/ionization processes  
**2001-** MALDI Mass Spectrometry Imaging and Microproteomics: Developments and Applications  
**2005-** Application of MS, microproteomics and MS Imaging in oncology and neurosciences

## ONGOING PROJECTS

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- **Developments**
  - Mass Spectrometry Imaging and Quantification Based MS Imaging of Proteins
  - Development of a new strategy for studying proteins conformation and interaction at the tissue level
  - Development of a markers quantification assays for fluids by MS
  - Development of in-vivo real time monitoring MS instrument
- **Translational projects to Clinics**
  - Gynecologic cancers: ovarian cancer & endometrial cancer
  - Neurooncology: Glioma
  - Spinal Cord Injury

## PUBLICATIONS

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- ✓ **H-factor: 31, 3186 citations (google scholar), 79 original publications, 10 patents, 10 books chapters on invitation, 101 oral communications including 68 on invitation in national and international conferences.**

### Publications

#### 1997

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- P1.** I. Fournier, R. C. Beavis, J. C. Blais, J. C. Tabet, G. Bolbach. *Hysteresis Effect Observed in MALDI Using Oriented, Protein-Doped Matrix Crystals.* *Int. J. Mass Spectrom. Ion Processes* (1997) 169/170: 19-29

#### 2000

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- P2.** C. Mayer, I. Fournier, R. Thouvenot. *Bis- and tetrakis(organosilyl) Decatungstosilicate,  $[\gamma\text{-SiW}_{10}\text{O}_{36}(\text{RSi})_2\text{O}]^{4-}$  and  $[\gamma\text{-SiW}_{10}\text{O}_{36}(\text{RSiO})_4]^{4-}$ : Synthesis and Structural Determination by Multinuclear NMR Spectroscopy and Matrix Assisted Laser Desorption/Ionisation Time-of-Flight Mass Spectrometry.* *Chem. Eur. J.* (2000) 6: 105-110
- P3.** I. Fournier, P. Chaurand, G. Bolbach, F. Lützenkirchen, B. Spengler, J.C. Tabet. *Sequencing of a branched peptide using Matrix Assisted Laser Desorption/Ionization time-of-flight mass spectrometry.* *J. Mass Spectrom.* (2000) 35: 1425-1433.

#### 2001

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- P4.** R. Krüger, A. Pfenninger, I. Fournier, M. Glückmann, M. Karas. *Analyte Incorporation and Ionization in Matrix-Assisted Laser Desorption/Ionization Visualized by pH Indicator Molecular Probes.* *Anal. Chem.* (2001) 73: 5812-5821

#### 2002

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- P5.** I. Fournier, A. Brunot, J.C. Tabet, G. Bolbach. *Delayed Extraction Experiments using a Repulsing Potential Before Ion Extraction: Evidence of Clusters as Ion Precursors in UV-MALDI. Part I: Dynamical Effects with the matrix 2,5-DHB.* *Int. J. Mass Spectrom.* (2002) 213, 203-215.
- P6.** I. Fournier, A. Marie, D. Lesage, G. Bolbach, F. Fournier, J.C. Tabet. *Post-source Decay time-of-Flight Study of Fragmentation Mechanisms of Protonated Synthetic Polymers under Matrix Assisted Laser Desorption/Ionization Conditions.* *Rapid. Commun. Mass Spectrom.*, (2002) 16: 1-9.
- P7.** I. Fournier, J.C. Tabet, G. Bolbach. *Irradiation Effects in MALDI and Surface modifications. Part I: Sinapinic Acid Monocrystals.* *Int. J. Mass Spectrom.*, (2002) 219, 515-523

## 2003

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- P8.** I. Fournier, R. Day, M. Salzet. *Direct analysis of neuropeptides by in situ MALDI-TOF mass spectrometry in the rat brain. Neuroendocrinol. Lett (2003) 24: 9-14*
- P9.** M. Karas, U. Bahr, I. Fournier, M. Glückmann, A. Pfenninger. *The Initial-Ion Velocity as a Marker for Different Desorption-Ionization Mechanisms in MALDI. Int. J. Mass Spectrom (2003) 226: 239-248*
- P10.** I. Fournier, C. Marinach, J. C. Tabet, G. Bolbach. *Irradiation Effects in MALDI, Ablation, Ion Production, and Surface Modifications. Part II : 2,5-Dihydroxybenzoic Acid Monocrystals. J. Am. Soc. Mass Spectrom. (2003) 14: 893-899*
- P11.** N. Srour, A. Lebel, S. McMahon, I. Fournier, M. Fugere, R. Day, CM. Dubois. *TACE/ADAM-17 Maturation and Activation of Sheddase Activity Require Proprotein Convertase Activity. FEBS Lett. (2003) 554: 275-283*

## 2004

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- P12.** F. D'Anjou, LJ. Bergeron, N. Ben Larbi, I. Fournier, M. Salzet, JP. Perreault, R. Day. *Silencing of SPC2 Expression using an Engineered Delta Ribozyme in the Mouse Beta TC-3 Endocrine Cell Line. J Biol Chem. (2004) 279(14): 14232-14239*

## 2005

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- P13.** I. Fournier, A. Brunot, J.C. Tabet, G. Bolbach. *Delayed Extraction Experiments using a Repulsing Potential Before Ion Extraction: Evidence of Clusters as Ion Precursors in UV-MALDI. Part II-Dynamical Effects with the matrix □-cyano-hydroxycinnamic acid. J. Mass Spectrom. (2005) 40(1): 50-59*
- P14.** M. Karas, I. Fournier, M. Bolte. *2-Cyano-3-(4-hydroxyphenyl)acrylic acid. Acta Crystallographica, Section E: Structure Reports Online (2005) E61(2): o383-o384*
- P15.** R. Lemaire, J-P. Lucot, P. Collinet, D. Vinatier, J-C. Tabet, M. Salzet, I. Fournier. *New Developments in Direct Analysis by MALDI Mass Spectrometry for the Study of Ovarian Cancer. Mol. Cel.. Proteomics (2005) 4(8): S306-S306*

## 2006

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- P16.** G. Lansac, W. Dong, C. M. Dubois, N. BenLarbi, C.Afonso, I. Fournier, M. Salzet, R. Day. *Lipopolysaccharide Mediated Regulation of Neuroendocrine Associated Proprotein Convertases and NeuropeptidePrecursor Processing in the Rat Spleen. J .Neuroimmunol. (2006) 171(1-2): 57-71*
- P17.** R. Lemaire, J.C. Tabet, P. Ducoroy, J.B. Hendra, M.Salzet, I. Fournier. *Solid Ionic Matrices for Direct Tissue Analysis and MALDI Imaging. Anal. Chem. (2006) 78: 809-819,*
- P18.** R. Lemaire, M. Wisztorski, A. Desmons, J.C. Tabet, R. Day, M. Salzet, I. Fournier. *MALDI-MS Direct Tissue Analysis of Proteins: Improving Signal Sensitivity Using Organic Treatments. Anal. Chem. (2006) 78, 7145-7153,*
- P19.** J. Stauber, R. Lemaire, M. Wisztorski, S. Aït-Menguellat, J-P. Lucot, D. Vinatier, A. Desmons, M. Deschamps, G. Proess, I. Rudlof, M. Salzet, I. Fournier. *New Developments in MALDI Imaging Mass Spectrometry for Pathological Proteomics Studies, Introduction to a Novel Concept, the Specific MALDI Imaging. Mol. Cell. Proteomics (2006) 5(10): S247-S247*

## 2007

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- P20.** K. Dreisewerd, R. Lemaire, G. Pohlentz, M. Wisztorski, S. Berkenkamp, F. Hillenkamp, M. Salzet, I. Fournier. *Molecular profiling of Matrix-coated and native tissue sections by UV- and IR-MALDI-O-TOF-MS. Anal. Chem. (2007) 79(6): 2463-2471*
- P21.** M. Wisztorski, R. Lemaire, J. Stauber, S. Aït-Menguellat, O. Jardin-Mathé, R. Day, M. Salzet, I. Fournier. *Imagerie MALDI: Une Nouvelle Technologie pour Découvrir et Valider de Nouveaux Biomarqueurs. Médecine Sciences. (2007), 23(hors série N°1): 31-36*
- P22.** R. Lemaire, A. Desmons, J.C. Tabet R. Day, M. Salzet, I. Fournier. *Direct Analysis and MALDI Imaging of Formalin Fixed, Paraffin Embedded Tissue Sections. J. Prot. Res. (2007), 6: 1295-1305,*
- P23.** R. Lemaire, J. Stauber, M. Wisztorski, C. Van Camp, A. Desmons, M. Deschamps, G. Proess, I. Rudlof, A. S. Woods, R. Day, M. Salzet, I. Fournier. *TAG-MASS: Specific Molecular Imaging of*

*Transcriptome and Proteome by Mass Spectrometry Based on Photocleavable Tag. J. Prot. Res. (2007), 6: 2057-2067*

- P24.** R. Lemaire, S. Ait-Menguellet, J. Stauber, V. Marchaudon, J-P. Lucot, P. Collinet, M-O. Farine, D. Vinatier, R. Day, P. Ducoroy, M. Salzet, I. Fournier. *Specific MALDI Imaging and Profiling for Biomarker Hunting and Validation: Fragment of the 11S Proteasome Activator Complex, Reg Alpha Fragment, Is a New Potential Ovary Cancer Biomarker. J. Prot Res. (2007), 6(11): 4127-4134*
- P25.** M. Wisztorski, R. Lemaire, J. Stauber, S. Ait-Menguellet, D. Croix, O. Jardin-Mathé, R. Day, M.Salzet, I. Fournier. *New developments in MALDI Imaging for Pathology Proteomics Studies. Curr. Pharm. Design (2007) 13(32): 3317-3324.*

## 2008

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- P26.** J. Stauber, R. Lemaire, J. Franck, D. Bonnel, D. Croix, R. Day, M. Wisztorski, M. Salzet, I. Fournier. *MALDI Imaging of FFPE Tissues: Application to Model Animals of Parkinson Disease for Biomarker Hunting. J. Prot Res. (2008), 7(3): 969-978*
- P27.** M. Wisztorski, D. Croix, E. Macagno, I. Fournier, Michel Salzet. *Molecular MALDI Imaging: An Emerging Technology for Neuroscience Studies. Dev. Neurobiol. (2008), 68(6): 845-858*
- P28.** M. Wisztorski, M. Salzet, I. Fournier. *Tissue Imaging Using MALDI Mass Spectrometry: The New Frontier of Histopathology Proteomics. Expert Review Proteomics (2008), 5(3): 413-24*
- P29.** O. Jardin-Mathé, D. Bonnel, J. Franck, M. Wisztorski, E. Macagno, I. Fournier, M. Salzet. *MITICS: Applications to Biomarkers found in FFPE Tissues from 6-OHDA treated Rats. Journal of Proteomics (2008), 71(3): 332-345*
- P30.** I. Fournier, J. Franck, M. Wisztorski, E. Macagno, M. Salzet. *MALDI imaging: a Review of the Current Status of the Technology. Neurosci. Imaging (2008) 3(1): 19-32*

## 2009

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- P31.** Franck J., Arafah K., Elayed M., Bonnel D., Vergara D., Jacquet A., Vinatier D., Wisztorski M., Day R., Fournier I., Salzet M. *MALDI imaging mass spectrometry: state of the art technology in clinical proteomics. Mol Cell Proteomics (2009) 8(9): 2023-33*
- P32.** Franck J., Arafah K., Barnes A., Wisztorski M., Salzet M., Fournier I. *Improving tissue preparation for matrix-assisted laser desorption ionization mass spectrometry imaging. Part 1: using microspotting. Anal Chem. (2009) 81(19): 8193-202*
- P33.** Franck J., El Ayed M., Wisztorski M., Salzet M., Fournier I. *On-tissue N-terminal peptide derivatizations for enhancing protein identification in MALDI mass spectrometric imaging strategies. Anal Chem. (2009) 81(20): 8305-17*
- P34.** Stauber J., El Ayed M., Wisztorski M., Day R., Fournier I., Salzet M. *Polymerase chain reaction and immunoassay--matrix assisted laser desorption mass spectrometry using tag-mass technology: new tools to break down quantification limits and multiplexes. Anal Chem. (2009) 81(22): 9512-21*

## 2010

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- P35.** Stauber J., Macaleese L., Franck J., Claude E., Snel M., Kükrer Kaletas B., Wiel IM., Wisztorski M., Fournier I., Heeren RM. ; *On-tissue Protein Identification and Imaging by MALDI-Ion Mobility Mass Spectrometry; J. Am. Soc. Mass Spectrom. (2009), 21(3), 338-347.*
- P36.** Vergara D., Merlot B., Lucot J-P., Collinet P., Vinatier D., Fournier I., Salzet M. ; *Epithelial-mesenchymal transition in ovarian cancer ; Cancer Lett. (2009), 291(1), 59-66.*
- P37.** Meriaux C., Franck J., Wisztorski M., Salzet M., Fournier I.; *Liquid Ionic Matrixes for MALDI Mass Spectrometry of Lipids; J. Prot. Res. (2010), 73(6), 1204-1218.*
- P38.** Franck J., Longuespée R., Wisztorski M., Van Remoortere A., Van Zeijl R. J., Deelder A. M., Salzet M., McDonnell L. A., Fournier I.; *MALDI Mass Spectrometry Imaging of Proteins exceeding 30000 Da; Medical Science Monitor (2010), 16(9), BR293-299.*
- \*P39.** El Ayed M., Bonnel D., Longuespée R., Castellier C., Franck J., Vergara D., Desmons A., Tasiemski A., Kenani A., Vinatier D., Day R., Fournier I., Salzet M.; *MALDI Imaging Mass Spectrometry in Ovarian Cancer for Tracking, Identifying & Validating Biomarkers; Medical Science Monitor (2010), 16(8), BR233-245.*
- P40.** Van Remoortere A., Van Zeijl R., Van Den Oever N., Franck J., Longuespée R., Wisztorski M., Salzet M., Deelder A. M., Fournier I., McDonnell L. A.; *MALDI Imaging & Profiling MS of Higher Mass Proteins from Tissues; J. Am. Chem. Soc. (2010), 21(11), 1922-29.*

- \*P41. Van Dyck A., Meriaux C., Bonnel D., Salzet M., Fournier I., Flammang P., Wisztorski M.; *Contribution of MALDI Tissue Profiling & MALDI Imaging for the Study of Saponins in Cuvierian Tubules of Holothuria Forskali*; *PLoS One* (2010), 5(11), e13923.

## 2011

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- P42. Bruand, J., Sistlaz, S.; Mériaux C.; Dorrestein P.C. ; Gaasterland, T. ; Ghassemian, M. ; Wisztorski M., Fournier I. ; Salzet , M. ; Macagno, E.; *Automated Querying and Identification of Novel Peptides using MALDI Mass Spectrometric Imaging*; *J. Prot. Res.* (2011) 10(4):1915-28.
- P43. Van Dyck A., Salzet M., Fournier I., Wisztorski M., Flammang P.; *The triterpene glycosides of Holothuria forskali: usefulness and efficiency as a chemical defense mechanism against predatory fish*; *J. Exp. Biol.* (2011), 214(Pt 8):1347-56.
- P44. Meriaux C., Arafah K., Tasiemski A., Wisztorski M., Bruand J., Wichlacz-Boidin C., Desmons A., Debois D., Laprévotte O., Brunelle A., Gaasterland T., Macagno E., Fournier I., Salzet M.; *Multiple Changes in Peptide and Lipid Expression Associated with Regeneration in the Nervous System of the Medicinal Leech*; *PLoS One* (2011), 6(4): e18359.
- \*P45. D'Anjou F., Routhier S., Perreault J-P., Latil A., Bonnel D., Fournier I., Salzet M., Day R.; *Molecular validation of PACE4 as a target in prostate cancer*; *Translational Oncology* (2011), 4(3): 157-72.
- \*P46. Bonnel D., Longuespée R., Franck J., Roudbaraki M., Gosset P., Day R., Salzet M., Fournier I.; *Multivariate Analyses for Biomarkers Hunting and Validation Through on Tissue Bottom-up or In Source Decay in MALDI-MSI*; *Anal. Bioanal. Chem.* (2011), 401(1):149-65.
- P47. Bruand J, Alexandrov T, Sistla S, Wisztorski M, Meriaux C, Becker M, Salzet M, Fournier I., Macagno E, Bafna V.; *AMASS: Algorithm for MSI Analysis by Semi-supervised Segmentation.*; *J Proteome Res.* (2011), 10(10):4734-43.

## 2012

---

- P48. Brignole-Baudouin F., Desbenoit N., Hamm G., Liang H., Both JP., Brunelle A., Fournier I., Guerinéau V., Legouffe R., Stauber J., Touboul D., Wisztorski M., Salzet M., Laprevote O., Baudouin C.; *A new safety concern for glaucoma treatment demonstrated by mass spectrometry imaging of benzalkonium chloride distribution in the eye, an experimental study in rabbits*; *PLoS One* (2012); 7(11): e50180.
- P49. Gagnon H., Franck J., Wisztorski M., Day R., Fournier I., Salzet M.; *Targeted mass spectrometry imaging: specific targeting mass spectrometry imaging technologies from history to perspective*; *Prog Histochem Cytochem.* (2012); 47(3): 133-74.
- P50. Longuespée R., Boyon C., Desmons A., Vinatier D., Leblanc E., Farré I., Wisztorski M., Ly K., D'Anjou F., Day R., Fournier I., Salzet M.; *Ovarian cancer molecular pathology*; *Cancer Metastasis Rev.* (2012); 31(3-4): 713-32.
- P51. Longuespée R., Boyon C., Castellier C., Jacquet A., Desmons A., Kerdraon O., Vinatier D., Fournier I., Day R., Salzet M.; *The C-terminal fragment of the immunoproteasome PA28S (Reg alpha) as an early diagnosis and tumor-relapse biomarker: evidence from mass spectrometry profiling*; *Histochem. Cell. Biol.* (2012); 138(1): 141-54.

## 2013

---

- P52. Arafah K., Croix D., Vizioli J., Desmons A., Fournier I., Salzet M. ; *Involvement of Nitric oxide through encannabinoids release in microglia activation during the course of CNS regeneration in the medicinal leech*; *Glia* (2013), 61: 636–649.
- \*P53. Quanico J., Franck J., Daully C., Strupat K., Dupuy J., Day R., Salzet M., Fournier I., Wisztorski M.; *Development of liquid microjunction extraction strategy for improving protein identification from tissue sections*; *J. Proteomics* (2013), 79: 200-218.
- \*P54. Bonnel D., Franck J., Mériaux C., Salzet M., Fournier I.; *Ionic matrices pre-spotted MALDI plates for patients markers following, drugs titration and MALDI MSI*; *Anal. Biochem.* (2013), 434: 187-198.
- P55. Longuespée R., Gagnon H., Boyon C., Strupat K., Daully C., Kerdraon O., Ighodaro A., Desmons A., Dupuis J., Wisztorski M., Vinatier D., Fournier I., Day R., Salzet M.; *Proteomic analyses of serous and endometrioid epithelial ovarian cancers - cases studies - molecular insights of a possible histological etiology of serous ovarian cancer*; *Proteomic Clinical Applications* (2013), 7(5-6): 337-354.



- \*P56. Wisztorski M., Fatou B., Franck J., desmons A., Farré, I., Leblanc E., Fournier I., Salzet M. ; *Microproteomics by Liquid Extraction Surface Analysis: Application to FFPE tissue to study the Fimbria region of tubo-ovarian cancer*; *Proteomic Clinical Applications* (2013), 7(3-4): 234-240.
- \*P57. Franck J., Quanico J., Wisztorski M., Day R., Salzet M., Fournier I.; *Quantification Based Mass Spectrometry Imaging of Proteins by Parafilm Assisted Microdissection*; *Anal. Chem.* (2013), 85(17): 8127-8134.

## 2014

---

- P58. Longuespée R., Boyon C., Desmons A., Kerdraon O., Leblanc E., Farré I., Vinatier D., Day R., Fournier I., Salzet M. ; *Spectroimmunohistochemistry: a novel form of MALDI mass spectrometry imaging coupled to immunohistochemistry for tracking antibodies* ; *OMICS* (2014), 18(2): 132-41.
- \*P59. Diolgent L., Wisztorski M., Treizebre A., Focsa C., Fournier I., Ziskind M.; *On the Origin of Increased Sensitivity and Mass Resolution Using Silicon Masks in MALDI*; *Anal. Chem.* (2014), 86(3):1404-13.
- \*P60. Mériaux C., Franck J., Park D-B., Quanico J., Kim Y-H., Chung C-K., Park Y-M., Steinbusch H., **Salzet M.**, Fournier I.; *Human temporal lobe epilepsy analyses by tissue proteomics*; *Hippocampus* (2014) 24(6):628-42.
- P61. Cizkova D., Le Marrec-Croq F., Franck J., Slovinska L., Grulova I., Devaux S., Lefebvre C., Fournier I., Salzet M.; *Alterations of protein composition along the rostro-caudal axis after spinal cord injury: proteomic, in vitro and in vivo analyses*; *Frontiers in Cell. Neurosci.* (2014) 8(105):1-15.
- P62. Longuespée R., Couture, F., Levesque C., Kwiakowska, Desjardins R., Gagnon S., Vergara D., Maffia M., Fournier I., Salzet M., Day R. *Implications of proprotein convertases in ovarian cancer cell proliferation and tumor progression: insights for PACE4 as a therapeutic target* ; *Translational Oncology* (2014), 7(3):410-19.
- P63. Longuespée R., Tastet C., Desmons A., Kerdraon O., Day R., Fournier I., Salzet M. § *HFIP extraction followed by 2D CTAB-SDS PAGE separation: A new methodology for protein identification from tissue sections after MALDI mass spectrometry profiling for personalized medicine research*; *OMICS* (2014), 18(6):374-84.
- P64. Arafah K., Longuespée R., Desmons A., Kerdraon O., Fournier I., Salzet M. §; *Lipidomics for Clinical Diagnosis: Dye Assisted Laser Desorption/Ionisation (DALDI) method for lipids detection in MALDI mass spectrometry imaging*; *OMICS* (2014), 18(8):487-98.
- P65. Cizkova D., Devaux S., Le Marrec-Croq F., Franck J., Slovinska L., Blasko J., Rosocha J., Spakova T., Lefebvre C., Fournier I., Salzet M. ; *Modulation properties of factors released by bone marrow stromal cells on activated microglia: an in vitro study* ; *Sci Rep.* (2014) 4:7514.

## 2015

---

- P66. Kopp C., Wisztorski M., Revel J., Mehiri M., Dani V., Capron L., Carette D., Fournier I., Massi L., Mouajjah D., Pagnotta S., Priouzeau F., Salzet M., Meibom A., Sabourault C.; *NanoSIMS and MALDI-MS Imaging techniques to study cnidarian dinoflagellate symbiosis*; *J. Zool.*, (2014), 118(2):125-31
- P67. Quanico J, Franck J, Gimeno JP, Sabbagh R, Salzet M, Day R, Fournier I. ; *Parafilm-assisted microdissection: a sampling method for mass spectrometry-based identification of differentially expressed prostate cancer protein biomarkers* ; *Chem Commun (Camb)*. (2015) 51(22):4564-7.
- P68. Ho Kim J., Franck J., Kang T., Heinsen H., Ravid R., Ferrer I., Hee Cheon M., Lee J.Y., Shin Yoo J., Steinbusch H.W., Salzet M., Fournier I., Mok Park Y. ; *Proteome-wide characterization of signalling interactions in the hippocampal CA4/DG subfield of patients with Alzheimer's disease* ; *Sci Rep.* (2015) 5:11138.
- P69. Grulova I., Slovinska L., Blaško J., Devaux S., Wisztorski M., Salzet M., Fournier I., Kryukov O., Cohen S., Cizkova D. ; *Delivery of Alginate Scaffold Releasing Two Trophic Factors for Spinal Cord Injury Repair* ; *Sci Rep.* (2015) 5:13702.
- P70. Duhamel M., Rodet F., Delhem N., Vanden Abeele F., Kobeissy F., Nataf S. Pays L., Desjardins R., Gagnon H., Wisztorski M., Fournier I., Day R., Salzet M. ; *Molecular Consequences of Proprotein Convertase 1/3 (PC1/3) Inhibition in Macrophages for Application to Cancer Immunotherapy: A Proteomic Study* ; *Mol. Cell. Proteomics* (2015) 14(11):2857-77.
- P71. Tasiemski A., Massol F., Cuvillier-Hot V., Boidin-Wichlacz C., Roger E., Rodet F., Fournier I., Thomas F., Salzet M. ; *Reciprocal immune benefit based on complementary production of antibiotics by the leech *Hirudo verbana* and its gut symbiont *Aeromonas veronii** ; *Sci. Rep.* (2015) Dec 45:17498.

- P72.** Demeyer M., Wisztorski M., Decroo C., De Winter J., Caulier G., Hennebert E., Eeckhaut I., Fournier I., Flammang P., Gerbaux P. ; *Inter- and intra-organ spatial distributions of sea star saponins by MALDI imaging* ; *Anal. Bioanal. Chem.* (2015) 407(29):8813-24.
- P73.** Fatou B., Wisztorski M., Focsa C., Salzet M., Ziskind M., Fournier I. ; *Substrate-Mediated Laser Ablation under Ambient Conditions for Spatially-Resolved Tissue Proteomics* ; *Sci. Rep.* (2015) 5:18135.

## 2016

- P74.** Vergara D., Simeone P., Frank J., Trerotola M., Tinelli A., Fournier I., Gaballo A., Saverio A., Salzet M., Maffia M. ; *Translating epithelial mesenchymal transition markers into the clinic: novel insights from proteomics* ; *Eupa Open Proteomic* (2016), 10 :31-41.
- P75.** Duhamel M., Rodet F., Murgoci A.N., Desjardins R., Gagnon H., Wisztorski M., Fournier I., Day R., Salzet M. ; *The proprotein convertase PC1/3 regulates TLR9 trafficking and the associated signaling pathways* ; *Sci. Rep.* (2016) 6:19360.
- P76.** Duhamel M., Rodet F., Murgoci A.N., Wisztorski M., Day R., Fournier I., Salzet M. ; *Proprotein convertase 1/3 inhibited macrophages: a novel therapeutic based on drone macrophages* ; *Eupa Open Proteomic* (2016), 11:20-22.
- P77.** Wisztorski M., Desmons A., Quanicco J., Fatou B., Gimeno J-P., Franck J., Salzet M., Fournier I. ; *Spatially-resolved protein surface microsampling from tissue sections using liquid extraction surface analysis* ; *Proteomics* (2016), In press.
- P78.** Rizzello A., Franck J., Pellegrino M., De Nuccio F., Simeone P., Fiore G., Di Tommaso S., Malvasi A., Tinelli A., Fournier I., Salzet M., Maffia M., Vergara D. ; *A proteomic analysis of human uterine myoma* ; *Curr. Protein Pept. Sci.* (2016), In press.
- P79.** Fatou B., Philippe P., Leblanc E., Vinatier D., Mesdag V., Wisztorski M., Focsa C., Salzet M., Ziskind M., Fournier I. ; *In vivo Real-Time Mass Spectrometry for Guided Surgery Application* ; *Sci. Rep.* (2016), 18;6:25919.

## Patents

- P1.** I. Fournier, R. Lemaire, M. Dechamps, J.C. Tabet, M. Salzet (inventors). *Use of Ionic Matrices for MALDI Mass Spectrometry Analysis of Tissue Sections*. CNRS-University of Sciences and Technology of Lille (owners). Patent Number: CA2611297, Priority Number: US20050687848P 20050607; WO2006IB02311 20060607
- P2.** I. Fournier, R. Lemaire, M. Salzet, M. Deschamps, J-C. Tabet, G. Proess, I Rudloff, M. Lemaître (inventors). *Use of Conjugates with Linkers Cleavable by Photodissociation or Fragmentation For Mass Spectrometry Analysis of Tissue Section*. CNRS-University of Sciences and Technology of Lille -Eurogentec SA (owners). Patent Number: CA2611266, Priority Number: US20050687848P 20050607; WO2006IB02309 20060607
- P3.** M. Wisztorski, V. Thomy, N. Verplanck, I. Fournier, M. Salzet (inventors). *Masks Useful for MALDI Imaging of Tissue Sections, Processes of Manufacture and Uses Thereof*. CNRS (owner). Patent Number: WO2007128751. Priority Number: US20060796535P 20060502
- P4.** I. Fournier, J. Franck, R. Longuespée, M. Salzet (inventors). *MALDI mass spectrometry imaging (MALDI-MSI) for proteins of high molecular mass*. EU 09306028.3-2404 & US PCT **2009**
- P5.** I. Fournier, J. Franck, C. Meriaux, M. Salzet (inventors). *Novel liquid ionic matrices for MALDI imaging*. CNRS DI47-10/DI47-12, US PCT, **2009**
- P6.** I. Fournier, K. Arafah, M. Salzet (inventors). *Dye assisted laser/desorption ionization for lipid imaging*. US PCT & EU **2009**
- P7.** I. Fournier, M. Salzet (inventors). *ISA-MS et PCR-MS*. US divisionnaire de la WO 2007/000669 A2, PCT, **2009**
- P8.** I. Fournier, M. Salzet (inventors). *Antibodies with Conjugates with Linkers Cleavable by Photodissociation*. US divisionnaire de la WO 2007/000669 A2, PCT, **2009**
- P9.** I. Fournier, M. Salzet (inventors). *Novel solid ionic matrices*. US divisionnaire de la WO 2007/007192 A1, **2009**.
- P10.** I. Fournier, M. Salzet, B. Fatou, M. Wisztroski, C. Focsa, M. Ziskind (inventors). *Device for Real-Time in-vivo MolecularAnalysis* WO 2016046748(A1). CNRS and Université Lille 1 (owner)