



# Julien Verdier

Post-doctoral immunologist  
Data analysis and visualization



[julien.verdier@free.fr](mailto:julien.verdier@free.fr)



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[julienverdier.github.io](https://julienverdier.github.io)

## EXPERIENCE

### POST-DOCTORAL SCIENTIST • INSERM • FRANCE • SINCE 2017

- Single-cell analysis of circulating immune cell populations in auto-immunity using mass cytometry (CyTOF)
  - ✓ Designed the experiments, set up conditions
  - ✓ Data cleaning, data analysis, and data visualization using Python
- Role of the gut microbiota in auto-immunity (with Pasteur Institute)
  - ✓ Designed the experiments and obtained funding
  - ✓ Initiated collaborations
- Grants
  - ✓ Helped writing the proposal to obtain funding for the Hyperion Imaging System (335 k€)
  - ✓ Obtained a grant to study the role of the gut microbiota in autoimmunity (18 k€)

### POST-DOCTORAL SCIENTIST • SYSMEDIBD / RWTH • GERMANY • 2013-2016

- Impact of oscillations of the transcription factor NF- $\kappa$ B in inflammatory bowel diseases
  - ✓ Set up a flow cytometry-based method to monitor NF- $\kappa$ B activity
  - ✓ Kinetic of innate immune responses to bacterial antigens for RNA-seq
- Screening fecal micro-RNAs in inflammatory bowel diseases
  - ✓ Setting-up and performing the Nanostring screen
  - ✓ Analyzed results, wrote the manuscript and got it published

### PHD • INSTITUT NECKER • FRANCE • 2006-2011

- Role of interleukin-17 in inflammatory bowel diseases
  - ✓ Extracting and measuring RNA from intestinal biopsies
  - ✓ *In vitro* study of immune responses to *Candida albicans*
  - ✓ Immune response to *Mycobacterium avium paratuberculosis* in inflammatory bowel diseases



# SKILLS

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## BIOLOGY

- Main cell and molecular biology techniques (cell culture, cell sorting, ELISA, qRT-PCR, FACS, CyTOF...)
- Project management (autonomy, teamworking, perseverance, writing grants, articles & reviews)
- Identifying and solving technical problems (troubleshooting)

## DATA

- Data cleaning and data analysis (Pandas, Numpy, Scipy, UMAP, Phenograph)
- Data visualization (Dot plots, Density scatter plots, Cleveland dot plots, Violin plots, Polar plots / Radar charts, Heatmaps, Volcano-plots, interactive charts...)
- Network analyses (Gephi)

## COMMUNICATION

- Best oral and written communication awards obtained in 2009 and 2010
- Podcast on the Journal of Crohn's and Colitis website
- Creation of the Twitter account @ImmunoSCOPE dedicated to scientific publications in immunology

## PUBLICATIONS AND SCIENTIFIC COMMUNICATIONS

- 2020** **Comparative analysis of thymic and blood Treg in myasthenia gravis: thymic epithelial cells contribute to thymic immunoregulatory defects** Frédérique Truffault \*, D Nazzal \*, Julien Verdier \*, A Gradolatto, E Fadel, R Roussin, B Eymard, Rozen Le Panse, Sonia Berrih-Aknin (\* co-authors) [Frontiers in immunology](#), 2020 May 6; 11:782
- Fecal micro-RNA screening in inflammatory bowel diseases**, Verdier J \*, Breunig I \*, Groner S, Roubrocks S, Roy S, Streetz K, Trautwein C, Roderburg C, Sellge G (\* co-authors) [J Crohns Colitis](#). 2020 Jan 1;14(1):110-117
- 2019** **Subcellular antigen localization in commensal E. coli is critical for T cell activation and induction of specific tolerance** Bennek E, Mandic A, Roubrocks S, Verdier J, Kufer T, Liedtke C, Trautwein C, Sellge G [Mucosal Immunology](#), 2019 Jan;12(1):97-107
- SFI 2019 (Nantes, France)  
**Poster** "Characterization of circulating immune cells in Myasthenia gravis using mass cytometry"  
 Myology 2019 (Bordeaux, France)  
**Poster** "Characterization of circulating immune cells in Myasthenia gravis using mass cytometry"  
 Journée Thématique Cytométrie de masse (Paris, France)  
**Oral presentation** "Characterization of circulating immune cells in a rare autoimmune disease using mass cytometry"
- 2018** **Pathophysiological mechanisms of autoimmunity** Sudres MA, Verdier J, Truffault F, Le Panse R, Berrih-Aknin S [Ann N Y Acad Sci](#). 2018 Feb;1413(1):59-68
- Journée Technologique Inter-Centres de la Pitié-Salpêtrière (Paris, France)  
**Oral presentation** "Characterization of circulating immune cells in a rare autoimmune disease : Myasthenia gravis"  
**Oral presentation** "Hyperion Imaging System"  
 Single-cell symposium (Paris, France) | organized by Curie institute  
**Poster** "Characterization of circulating immune cells in a rare autoimmune disease:Myasthenia gravis"
- 2017** **c-Jun N-terminal kinase 2 promotes enterocytes survival and goblet cell differentiation in the inflamed intestine** Mandic A, Bennek E, Verdier J, Zhang K, Roubrocks S, Davis R, Denecke B, Gassler N, Streetz K, Hornef M, Cubero FJ, Trautwein C, Sellge G [Mucosal Immunol](#). 2017 Sep;10(5):1211-1223  
 12<sup>th</sup> congress of the European Crohn's and Colitis Association (ECCO) (Barcelona, Spain)  
**Poster** "Inflammatory dyskinesia: defects of NF-kB dynamic behavior as a new potential biomarker for personalized medicine in inflammatory bowel diseases"  
**Poster** "Fecal micro-RNAs in Inflammatory Bowel Diseases"
- 2016** **Anti-food and anti-microbial IgG subclass antibodies in inflammatory bowel disease** Jansen A, Mandic A, Bennek E, Frehn L, Verdier J, Tebrügge I, Lutz H, Streetz K, Trautwein C, Sellge G [Scand J Gastroenterol](#). 2016 Dec;51(12):1453-1461  
 1<sup>st</sup> Conference of the European Association of Systems Medicine (EASyM) (Berlin, Germany)  
**Poster** "Fecal micro-RNAs in Inflammatory Bowel Diseases"
- 2015** **Biliary Mucosal Barrier and Microbiome** Verdier J, Luedde T, Sellge G. [Viszeralmedizin](#). 2015 Jun;31(3):156-61.

**Haematopoietic cell-derived Jnk1 is crucial for chronic inflammation and carcinogenesis in an experimental model of liver injury** Cubero FJ, Zhao G, Nevzorova YA, Hatting M, Al Masaoudi M, Verdier J, Peng J, Schaefer FM, Hermanns N, Boekschoten MV, Grouls C, Gassler N, Kiessling F, Muller M, Davis RJ, Liedtke C, Trautwein C. *J Hepatol.* 2015 Jan;62(1):140-9.

**2014** **Distinct patterns of IgG and IgA against food and microbial antigens in serum and feces of patients with inflammatory bowel diseases** Frehn L, Jansen A, Bennek E, Mandic AD, Temizel I, Tischendorf S, Verdier J, Tacke F, Streetz K, Trautwein C, Sellge G. *PLoS One.* 2014 Sep 12;9(9):e106750.

**2013** **Molecular mechanisms and cell targets of Th17 cells in the gastrointestinal tract: an innate sense of adaptivity** Verdier J, Ruemmele FM. *Int Rev Immunol.* 2013 Oct-Dec;32(5-6):475-92.

**Specific IgG response against *Mycobacterium avium paratuberculosis* in children and adults with Crohn's disease** Verdier J, Deroche L, Allez M, Loy C, Biet F, Bay S, Matysiak-Budnik T, Reytrat JM, Heyman M, Cerf-Bensussan N, Ruemmele FM, Ménard S. *PLoS One.* 2013 May 2;8(5):e62780.

**2012** **Compartmentalized expression of Th1 and Th17 cytokines in pediatric inflammatory bowel diseases** Verdier J, Begue B, Cerf-Bensussan N, Ruemmele FM. *Inflamm Bowel Dis.* 2012 Jul;18(7):1260-6.

**2011** **Defective IL10 signaling defining a subgroup of patients with inflammatory bowel disease** Begue B, Verdier J, Rieux-Laucat F, Goulet O, Morali A, Canioni D, Hugot JP, Daussy C, Verkarre V, Pigneur B, Fischer A, Klein C, Cerf-Bensussan N, Ruemmele FM. *Am J Gastroenterol.* 2011 Aug;106(8):1544-55.

**2010** **Reduced expression of FOXP3 and regulatory T-cell function in severe forms of early-onset autoimmune enteropathy** Moes N, Rieux-Laucat F, Begue B, Verdier J, Neven B, Patey N, Torgerson TT, Picard C, Stolzenberg MC, Ruemmele C, Rings EH, Casanova JL, Piloquet H, Biver A, Breton A, Ochs HD, Hermine O, Fischer A, Goulet O, Cerf-Bensussan N, Ruemmele FM. *Gastroenterology.* 2010 Sep;139(3):770-8.

Journées Françaises d'Hépatologie et d'Oncologie Digestive (Paris, France)

**Poster** "Induction de la voie Th17 par *Candida albicans* chez l'homme" **Best poster award**

Journées de l'école doctorale (JED, Paris, France)

**Poster** "Characterization of the components of *Candida albicans* implicated in the Th17 response in humans"

**2009** Journées de l'école doctorale (JED, Paris, France)

**Oral presentation** "IL-17 and intestinal inflammation in humans: protective or deleterious?" **Best oral communication award**

**2008** **The cytokine interleukin 21: a new player in coeliac disease?**

Meresse B, Verdier J, Cerf-Bensussan N. *Gut.* 2008 Jul;57(7):879-81.