

Hervé Rhinn

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Date of birth: 14th of July 1979

Telephone: +33 786 324 406

Nationality: French

Education

2003-2007 PhD in biology

[Pierre&Marie Curie University, Paris](#)
under [Dr. Virginie Escriou](#)

2002-2003 Diplôme d'Etudes Approfondies (Master),

[Museum National d'Histoire Naturelle, Paris](#) - Graduation in July 2003

1999-2003 Ingénieur de l'Ecole Polytechnique (Engineering degree from Grande Ecole)

[Ecole Polytechnique, Palaiseau](#)- Options: Biology & Therapeutic Chemistry

Research

2013-2012 Assistant Professor

Abeliovich lab, Columbia University Pathology Department, New York, USA

2012-2013 Bioinformatics consultant

Abeliovich lab, Columbia University Pathology Department, New York, USA

- Gene expression networks alteration in Alzheimer's disease patient brain.
- *In silico* identification of drugs reversing the molecular signatures associated to risk factors for neurological diseases.
- Analysis of Alzheimer's and Parkinson's disease genome-wide association studies (GWAS) for by two-locus interactions (epistasis).

2010-2012 Associated Research Scientist

Abeliovich lab, Columbia University Pathology Department, New York, USA

- Effect of common disease-associated genetic polymorphism on genome-wide gene expression in brain
- Gene expression networks alteration in Parkinson's and Alzheimer's disease patient brain.
- Analysis of Alzheimer's and Parkinson's disease genome-wide association studies (GWAS) for by two-locus interactions (epistasis).

2009-2010 Post-doctoral Scientist

Abeliovich lab, Columbia University Pathology Department, New York, USA

- RNAseq analysis of human brain expression in health and disease (Parkinson's, Alzheimer's, ALS).
- Molecular characterization of Alzheimer's Disease patients derived induced neurons.
- Post-transcriptional regulation of alpha-synuclein by environmental and genetic factors, relevance to sporadic Parkinson's disease

2008-2009 Post-doctoral Fellow (Fondation pour la Recherche Medicale)

Abeliovich lab, Columbia University Pathology Department, New York, USA

- Characterization of a mouse genetic model of midbrain dopaminergic neurons deletion.
- Study of microRNAs and mRNAs networks affected by dopaminergic in brain by microarrays
- Parkinson's disease microRNAs gene therapy to reduce SNCA levels (design and construction of AAV plasmids for microRNA expression, in vitro test of microRNAs activity)

2003-2007 PhD student

Chemical and Genetic Pharmacology Laboratory, Paris, France

Head of lab: Dr. Daniel Scherman, Advisor: Dr. Virginie Escriou

- Transcriptional characterisation of a mice model of traumatic brain injury
- Follow-up of pharmacological treatments in mice model of brain ischemia

Teaching

2003-2006 **Undergraduate teaching**

Genetics Department, Pierre & Marie Curie University, Paris, France

Skills

- **Human / Organisationnal:**

Management: supervision of technicians and post-doctoral researchers work, oversight of multi-center collaborations.

Team working: years of collaborative work in a highly international environment with collaborators from different technical backgrounds.

Students supervision: theoretical (lectures) and practical (undergrads, MD/PhD and PhD students mentoring)

Grants and scientific articles redaction, scientific work presentation to diverse audiences.

- **Technical:**

Extensive experience in molecular biology, with particular emphasis on nucleic acids technology. Cloning & plasmid production, RT-qPCR, in-situ hybridization, microarrays labelling and analysis (Agilent, Illumina, Affymetrix), next-generation sequencing libraries constructions and analysis (Illumina, Solid). Also Western-blot, ELISAs, protein and nucleic acid purification and measurement techniques.

Cellular biology: cell culture and transfection (plasmids, siRNA), confocal microscopy

Extensive experience in experimental design, including *in vivo* pharmaceutical assays.

Bioinformatics: high-level with specific emphasis on genetic analysis of Genome-wide analysis and eQTL data and on gene expression analysis (microarrays, RNAseq, gene networks).

- **Languages:**

French (native)

Fluent English

Some German

- **Information technology:**

Extensive experience in genetics and microarray data analysis, from image acquisition software to data normalisation, analysis and mining.

Familiar with the use of public repository databases (GEO, dbGap) and their use in meta-analysis.

Good programming skills in R (use of Bioconductor, creation of specific scripts)

Familiar with genomic linkage analysis (plink) statistical and modelization softwares (R, SigmatPlot), online biological databank mining, Windows operating systems and all the Office applications.

References

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Publications

- Rhinn H**, Fujita R, Qiang L, Cheng R, Lee JH, Abeliovich A. Integrative genomics identifies APOE ϵ 4 effectors in Alzheimer's disease. *Nature*. 2013 Aug 1;500(7460):45-50. doi: 10.1038/nature12415. Epub 2013 Jul 24.
- MacLeod DA*, **Rhinn H***, Kuwahara T*, Zolin A, Di Paolo G, McCabe BD, Marder KS, Honig LS, Clark LN, Small SA, Abeliovich A. RAB7L1 interacts with LRRK2 to modify intraneuronal protein sorting and Parkinson's disease risk. *Neuron*. 2013 Feb 6;77(3):425-39. doi: 10.1016/j.neuron.2012.11.033.
- Rhinn, H.**, Qiang, L., Yamashita, T., Zolin, Z., Vanti, W., Abeliovich, A. Alternative α -synuclein transcript usage as a convergent mechanism in Parkinson's disease pathology. *Nat. Commun.*, doi:10.1038 / 2032 (2012)
- Qiang, L., Fujita, R., Yamashita, T., Angulo, S., **Rhinn, H.**, Rhee, D., Doege, C., Chau, L., Aubry, L., Vanti, W. B., Moreno, H., Abeliovich, A. *Directed conversion of Alzheimer's disease patient skin fibroblasts into functional neurons*. *Cell* 146, 359-371 (2011).
- Rhinn, H.**, Largeau, C., Bigey, P., Kuen, R. L., Richard, M., Scherman, D., Escriou, V. *How to make siRNA lipoplexes efficient? Add a DNA cargo*. *Biochim Biophys Acta* 1790, 219-230 (2009).
- Richard, M., Arfi, A., **Rhinn, H.**, Gandolphe, C. & Scherman, D. *Identification of new markers for neurodegeneration process in the mouse model of Sly disease as revealed by expression profiling of selected genes*. *J Neurosci Res* 86, 3285-3294 (2008).
- Rhinn, H.**, Scherman, D. & Escriou, V. *One-step quantification of single-stranded DNA in the presence of RNA using Oligreen in a real-time polymerase chain reaction thermocycler*. *Anal Biochem* 372, 116-118 (2008).
- Rhinn, H.**, Marchand-Leroux, C., Croci, N., Plotkine, M., Scherman, D., Escriou, V. *Housekeeping while brain's storming: Validation of normalizing factors for gene expression studies in a murine model of traumatic brain injury*. *BMC Mol Biol* 9, 62 (2008).
- Khoury, M., Bigey, P., Louis-Plence, P., Noel, D., **Rhinn, H.**, Scherman, D., Jorgensen, C., Apparailly, F. *A comparative study on intra-articular versus systemic gene electrotransfer in experimental arthritis*. *J Gene Med* 8, 1027-1036 (2006).
- Haddad, M., **Rhinn, H.**, Bloquel, C., Coqueran, B., Szabo, C., Plotkine, M., Scherman, D., Margai, I. *Anti-inflammatory effects of PJ34, a poly(ADP-ribose) polymerase inhibitor, in transient focal cerebral ischemia in mice*. *Br J Pharmacol* 149, 23-30 (2006).

Patents

Transcriptome wiring analysis, Herve Rhinn / Asa Abeliovich / Columbia Tech Venture
Drugs identification by gene expression, Herve Rhinn / Asa Abeliovich / Columbia Tech Venture
Optimized microRNA constructs, Herve Rhinn / Toru Yamashita / Asa Abeliovich / The Trustees of Columbia University.