

## LESCAR Julien, Ph.D.

Directeur de Recherche CNRS / *Senior Scientist CNRS*

**Membre d'Equipe / Team Member**      **Biologie moléculaire et Immunologie de la phase hépatique du paludisme / *Biology and immunology of malaria liver infection***

### Bio

Contact                      [Julien.lescar@upmc.fr](mailto:Julien.lescar@upmc.fr)

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### Formation / Education

1993                      PhD, *Université Paris XI Orsay/ Institut Pasteur, Paris*  
2010                      HDR *Université Aix-Marseille 2010*

### Expérience professionnelle antérieure / Past Professional experience

2013 -                      Principal Investigator, CIMI-Paris  
2007-2013                      Group Leader AFMB-CNRS, Marseille  
2002-2006                      Assistant Professor NTU, Singapour  
1999-2001                      CERMAV, Grenoble  
1997-1998                      Chercheur Post-Doctoral, ESRF, Grenoble  
1994-1996                      Chercheur Post-Doctoral, Institut Pasteur, Paris

### Distinctions - Titres honorifiques / Honors and Awards

2008                      Senior Researcher (DR2) CNRS  
2006                      Guest lecturer Novartis Foundation Symposium  
2002                      Senior Research Associate (CR1) CNRS  
1999                      Junior Research Associate (CR2) CNRS

### Recherche / Research

#### Mots-clés / Keywords

Microbiologie Structurale, Conception d'inhibiteurs aidée par la biologie structurale / *Structural Microbiology, Structure-based drug discovery*

#### Programmes en cours / Current Research

Nous utilisons les techniques de biologie structurale pour apporter des informations qui permettent de guider la conception de médicaments et de nouveaux vaccins.

*We use structural biology techniques with a view to assist drug discovery and the design of new vaccines.*

#### Réalisations représentatives / Major achievements

- Première structure tridimensionnelle d'une protéine d'enveloppe des alphavirus (famille à laquelle le chikungunya appartient).

- Définition des protéines virales de fusion de classe II
- Premières structures d'enzymes du virus de la dengue constituant des cibles pharmaceutiques importantes (polymérase, protéase-hélicase).

### Domaines d'applications / Fields of application

Microbiologie structurale.

### Contrats de recherche récents / External peer-reviewed funding

- Académique/ *Academic*
- Industriel / *Private companies*

## **Enseignement / Teaching**

### Encadrement / Supervision

- **Master and PhD programs**

*En cours / Current*

*Antérieurs / Completed*

10 thèses encadrées avec Nanyang Technological University  
Singapore

*10 Phds at NTU, Singapore*

- **Postgraduate education medical doctors and postdocs**

*En cours / Current*      Mathieu Rodero (post doc)

## **Relevant Publications**

- Lim SP, Koh JH, Seh CC, Liew CW, Davidson AD, Chua LS, Chandrasekaran R, Cornvik TC, Shi PY & Lescar J. A crystal structure of the dengue virus non-structural protein 5 (NS5) polymerase delineates interdomain amino acid residues that enhance its thermostability and de novo initiation activities. *J Biol Chem.* 2013 Oct 25;288(43):31105-14. doi: 10.1074/jbc.M113.508606. Epub 2013 Sep 11.
- Decroly E, Ferron F, Lescar J, Canard B. Conventional and unconventional mechanisms for capping viral mRNA. *Nat Rev Microbiol.* 2011 Dec 5;10(1):51-65. doi: 10.1038/nrmicro2675. Review.
- Ferron F, Li Z, Danek EI, Luo D, Wong Y, Coutard B, Lantéz V, Charrel R, Canard B, Walz T & Lescar J. The hexamer structure of Rift Valley fever virus nucleoprotein suggests a mechanism for its assembly into ribonucleoprotein complexes. *PLoS Pathog.* 2011 May;7(5):e1002030. doi: 10.1371/journal.ppat.1002030. Epub 2011 May 12.
- Luo D, Xu T, Watson RP, Scherer-Becker D, Sampath A, Jahnke W, Yeong SS, Wang CH, Lim SP, Strongin A, Vasudevan SG & Lescar J. Insights into RNA unwinding and ATP hydrolysis by the flavivirus NS3 protein. *EMBO J.* 2008 Dec 3;27(23):3209-19. doi: 10.1038/emboj.2008.232. Epub 2008 Nov 13.
- Yap TL, Xu T, Chen YL, Malet H, Egloff MP, Canard B, Vasudevan SG & Lescar J. Crystal structure of the dengue virus RNA-dependent RNA polymerase catalytic domain at 1.85-angstrom resolution. *J Virol.* 2007 May;81(9):4753-65. Epub 2007 Feb 14.

- Fan H, Ooi A, Tan YW, Wang S, Fang S, Liu DX & Lescar J. The nucleocapsid protein of coronavirus infectious bronchitis virus: crystal structure of its N-terminal domain and multimerization properties. *Structure*. 2005 Dec;13(12):1859-68.
- Shi M, Sundramurthy K, Liu B, Tan SM, Law SK & Lescar J. The crystal structure of the plexin-semaphorin-integrin domain/hybrid domain/I-EGF1 segment from the human integrin beta2 subunit at 1.8-A resolution. *J Biol Chem*. 2005 Aug 26;280(34):30586-93. Epub 2005 Jun 17.
- Bressanelli S, Stiasny K, Allison SL, Stura EA, Duquerroy S, Lescar J, Heinz FX, Rey FA. Structure of a flavivirus envelope glycoprotein in its low-pH-induced membrane fusion conformation. *EMBO J*. 2004 Feb 25;23(4):728-38. Epub 2004 Feb 12.
- Delarue M, Boulé JB, Lescar J, Expert-Bezançon N, Jourdan N, Sukumar N, Rougeon F, Papanicolaou C. Crystal structures of a template-independent DNA polymerase: murine terminal deoxynucleotidyltransferase. *EMBO J*. 2002 Feb 1;21(3):427-39.
- Lescar J, Roussel A, Wien MW, Navaza J, Fuller SD, Wengler G, Wengler G, Rey FA. Cell. 2001 The Fusion glycoprotein shell of Semliki Forest virus: an icosahedral assembly primed for fusogenic activation at endosomal pH. *105(1):137-48*.