

# Rasha KHAYYAT, PHD

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## **PROFILE**

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Pharmacist and doctor in Microbiology /virology. I'm interested in the discovery of new antimicrobial therapeutics for both bacteria and viruses, the application of viruses in therapeutics, viral infection diagnosis and understanding of mechanisms underlying host-virus interactions.

## **QUALIFICATIONS**

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- 2005-2010  
Châtenay-Malabry  
France  
**PhD in microbiology**  
Pharmacy college of Châtenay-Malabry, University PARIS-XI  
Graduate school therapeutic innovation, branch: Microbiology. Thesis director : Didier PONCET
- 2004-2005  
Châtenay-Malabry  
France  
**Master « M2 » in microbiology**  
Pharmacy college of Châtenay-Malabry, Université PARIS-XI
- 1998-2003  
Nablus  
Palestine  
**Bachelor in pharmacy**  
Pharmacy college, An-Najah National University
- 1998  
Nablus  
Palestine  
**High school certificate**  
(Equivalent to A level)
- 1995-2002  
Nablus  
Palestine  
**D.E.L.F. (French language studies diploma)**  
**D.A.L.F. (Advanced French language diploma)**

## **PROFESSIONAL EXPERIENCES**

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- July 2013 – Present  
Nablus  
Palestine  
**Head of Division of Microbiology and Immunology**  
Department of Medical sciences  
Faculty of Medicine and Health Sciences of An-Najah National University
- August 2010 - Present  
Nablus  
Palestine  
**Assistant professor**  
Faculty of Medicine and Health Sciences of An-Najah National University  
Teaching microbiology, immunology, infectious diseases, cell biology and biotherapy  
- Teaching microbiology: introduction on microorganisms and studying pathogens and associated diseases  
- Teaching virology: introduction on viruses and non-conventional infectious agents with a focus on animal viruses structure, replication, pathogenesis and emergent viral infection  
- Teaching immunity: basics of the immune system, its function and disorders  
- Teaching cell biology: cell structure, cellular organelles, cellular movement, cellular membranes their structure and functions, cellular transport and communication, cellular transduction, cellular information: DNA, chromosomes and nucleus, mitosis and meiosis  
- Teaching biotherapy: principles of recombinant DNA technology, gene therapy, antisense therapy and immunotherapy  
- Supervising in microbiology labs  
Research activities  
- Antimicrobial resistance and genotyping of *Shigella* and *Enterobacteria* resistant strains  
- Therapeutic activity of Palestinian herbs on viral infection  
- Prevalence of avian *Chlamydia* in Palestinian poultry  
- Prevalence and genotyping of viruses causing diarrhea in Palestinian children
- June 2012-July 2012  
Maison Alford  
France  
**Trainee**  
ANSES. Avian *Chlamydia* detection and genotyping  
- Detecting the presence of avian *Chlamydia* in cloacal swabs from Palestinian poultry
- June 2011- July 2011  
Evry  
France  
**Trainee**  
Généthon. Research and development of gene therapeutics.  
- Analytical test development for cGMP production of gene therapeutics
- 2004-2010  
Gif-sur-Yvette  
France  
**Thesis work**  
Laboratoire de virologie moléculaire et structurale, Upr CNRS 3296 Usc INRA  
Subject : « USP7, a cellular partner of the non-structural protein NSP5 of rotavirus and study of the rotavirus entry by using endocytotic inhibitors »  
- Identification and mapping of interaction domains between the non-structural protein NSP5 of rotavirus and its cellular partner USP7 « Ubiquitin Specific Protease »  
- Kinetic study of rotavirus entry to MA104 cells, demonstration of rotavirus entry by endocytosis by using endocytotic inhibitors and studying the entering viral particle by electron microscopy

2001-2003                      **Pharmacy training**  
 Nablus                              Alrazi pharmacy  
 Palestine                            Drug dispensing and patient advising

## COMPETENCES

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- **Molecular and cellular biology, biotechnology and biochemistry**
  - *Identification of cellular partner of NSP5:*
    - **Cloning** of tagged and untagged viral proteins in bacterial and eukaryotic vectors ( primer ordering, PCR, agarose gel electrophoresis)
    - **Transient and stable expression of viral proteins** in eukaryotic cells (transfection, MA104, HEK and COS7 cell manipulation, SDS-PAGE, western blot)
    - **Affinity chromatography and co-immunoprecipitation**
    - **immunolabeling** to detect the viral and recombinant protein expression and **visualization with epifluorescent and confocal microscopes**
  - *Mapping interaction domains:*
    - Protein expression in *E.coli*
    - **far western**
    - affinity chromatography
    - immunolabeling for protein co-localization
  - *Kinetic Study of rotavirus entry and viral entry tracking by electron microscopy:*
    - **production, purification and titrating** of viral particles
    - **cell sample preparation** for infected cell analysis by **flux cytometry**
  - *Analysis of rotavirus entry by endocytosis :*
    - Cellular treatment with endocytotic inhibitors
    - Cytotoxicity evaluation of endocytotic inhibitors by **metabolic labeling**
    - Immunolabeling of endocytotic compartments
- **Antibacterial resistance tests and genotyping**
- **Computer skills** : Word, Excel, Powerpoint, Endnote, Strider, Sequencher, Photoshop, ImageJ
- **Technological skills** : data bases questioning (Medline, NCBI, Expasy)
- **Report writing** : result analysis, synthesizing and presentation
- **Leadership training** forming in communication skills, planning, group directing and community works

## OTHER PROFESSIONAL EXPERIENCES

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March 2012- present Palestine	<b>Board member of Al-Rafic association for the Palestinian graduates from French universities</b> Secretary: orientation and accompaniment of students going to study in France and graduates who are back home, supporting Palestinian French higher education collaboration and cultural activities
2011- present Palestine	<b>Board member of Palestinian forum for medical research PFMR</b> External relations and scientific committee: animation and organization of seminars, conferences and scientific days
2003-2004 Asnières et Nanterre France	<b>Arabic language assistant</b> Animation of cultural and linguistic activities Auguste Renoir et Joliot Curie high schools
2002-2003 Nablus Palestine	<b>Arabic-French translator</b> Mental health program of doctors of the world (Médecins de monde)

## EXTRA-PROFESIONAL ACTIVITIES

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Nablus Palestine	Tutoring at « Community Service Center »
Châtenay-Malabry France	Ex-member of ADIT (Association of PhD students of the graduate school therapeutic innovation) <ul style="list-style-type: none"> <li>- organizing the graduate school days</li> <li>- enhancing relations between Ph. D. students</li> <li>- participation in the graduate school life, participation in the young researcher confederation</li> </ul>
Bures-sur-Yvette France	Ex-member of the association BDI (association of students at the l'île residence) <ul style="list-style-type: none"> <li>- providing internet network</li> <li>- participating in the students life at the residence</li> </ul>

## LANGUAGES

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- Arabic: mother language
- English: fluent, reading, writing, speaking
- French: fluent, reading, writing, speaking
- Spanish: basic knowledge

## **PUBLICATIONS**

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- SJÖLANDER I., CIOFU O., **KHAYYAT R.**, ABU ZANT A., HUSSEIN A., ABU TAHA A., HAMMERUM A., HANSEN F. : "The role of Carbapenemases among Carbapenem resistant Gram Negative Rods in Palestine". *Under review in JAC*
- LIBERSOU S., OULDALI M., **KHAYYAT R.**, LEPAULT J. : "The structural protein VP7 plays an important role in the rotavirus cell entry". *Under review*
- **KHAYYAT R.**, MARTIN D., PONCET D., DUARTE M. : "USP7 is a cellular partner of the non-structural protein NSP5 of rotavirus". *In progress*

## **POSTERS**

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- XI<sup>es</sup> Journées francophones de virologie, 23-24 avril 2009, Paris, France. Le rotavirus entre dans la cellule par endocytose via les coprs multivésiculaires. **KHAYYAT R.**, PONCET D., DUARTE M.
- IX<sup>es</sup> Journées francophones de virologie, 26-27 avril 2007, Paris, France. Identification d'un partenaire cellulaire de la protéine non-structurale NSP5 du rotavirus. **KHAYYAT R.**, Martin D., PONCET D., DUARTE M.

## **AWARDS**

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Jun – Jul 2012	French Governmental Scholarship for post doctoral research
2005-2009	French governmental Scholarship BGF for Ph. D. studies
2004-2005	Paris-Sud 11 University scholarship for master studies

## **REFERENCES**

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- **Walid BASHA, PhD**  
Assistant professor at AN-Najah National University  
Director of Medical Sciences department  
Faculty of medicine and Health Science  
An-Najah National University  
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Nablus, Palestine  
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- **Jean LEPAULT, PhD**  
DR2 CNRS, collaborator and responsible for the team of electronic microscopy  
Laboratoire de Virologie Moléculaire et Structurale  
LVMS  
Bât. 14B, 1 Avenue de la Terrasse  
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- **Didier PONCET, PhD**  
DR2 INRA, supervisor and responsible for the team of molecular biology of rotaviruses  
Laboratoire de Virologie Moléculaire et Structurale  
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- **Nathalie KAYADJANIAN, PhD**  
Deputy scientific director, French Association for Myopathies "AFM"  
Association Française contre les Myopathies  
91000 Evry, France  
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