UMR-S 1092 INSERM

Antimicrobials: molecular supports of resistances and therapeutic innovations

Molecular supports of resistances to antimicrobials:
- focus on resistance to antibiotics, applying the integron model,
- focus on resistance to antiviral drugs, applying the cytomegalovirus.

KEYWORDS >
Antibiotics
Cytomegalovirus
Integrons
Resistance
Antiviral Drugs
Bacteria
Therapeutic

2012
The unit carries out research in two areas:

Resistance to antibiotics:

- Study of integrase expression and integron cassette rearrangement in vitro and in vivo.
- Integron epidemiology in humans, animals and the environment.
- Relevance of integrons detection as an antibiotic resistance marker.

Cytomegalovirus:

- Characterization of new CMV mutations observed in transplant patients.
- Study of the CMV DNA packaging complex for the development of new antiviral drugs targeting this complex.
- Development of a first trimester placental explant model, cultivated in vitro or transplanted to a SCID mouse to study viral replication kinetics and the impact on the cell environment.
KEY FIGURES
(at 1st January 2012)

Teacher-researchers: 9
Other researchers: 7
HDR (accredited to direct research): 7
Doctoral students (2011-2012): 7
Engineers, technicians: 0.3 ETP
Dissertations defended (2008-2011): 5
National projects: 1 Inserm DGOS (French General Directorate for Healthcare) translational research agreement, 2 ANR and 2 national PHRC (Clinical Research Hospital Programme)
European project: 1 Pills project in partnership with the GRESE laboratory, University of Limoges
Others: Integrons and corynebacteria (Financed by the FRM (Foundation for Medical Research in France)

ECONOMIC ADDED VALUE
(2008-2011)

Number of patents filed: 1 patent filed in the USA in September 2010 with Inserm Transfert
Industrial or research agreements with major organizations: 1
Conferences, seminars organized: 3

HONOURS
Marie Cécile Ploy: Robert Debré Medical Research Award

PARTNERSHIPS

Active National University Partnerships:
Bacterial Genome Plasticity Unit, Pasteur Institute, Paris
National Reference Centre for Toxin-Producing Corynebacteria, Pasteur Institute, Paris
Crystallography and Biological NMR Laboratory, UMR 8015 CNRS, Paris, Unit of Virus Host Cell Interactions, UJF-EMBL CNRS UMI3265, Grenoble

Current International University Partnerships:
Virology department, Medical School Hanover, Germany
Virology Division, Prince of Wales Hospital, Australia

Research Federation: GEIST (FR 3503)
SCIENTIFIC PRODUCTION OF RESEARCH TEAM
(2008-2011)

Website publication: hal.archives-ouvertes.fr/UMR-S1092
International articles: 22
Number of works: 1
Conference presentations: 41 international and 29 national

Major publications and/or patents over the last 5 years

• Barraud O, Badell E, Denis F, Guiso N, Ploy M-C.

• Jove T., Da Re S., Denis F., Mazel D., Ploy M-C.
  “Inverse correlation between promoter strength and excision activity in class 1 integrons”. PLoS Genetics, 2010; 6. IF: 9,532


• Barraud O, Baclet M-C, Denis F, Ploy M-C.
  “Quantitative multiplex real-time PCR for detecting class 1, 2 and 3 integrons”. J Antimicrob Chemother. 2010; 65:1642-5. IF: 4,659


• Guérin E, Cambray G, Sanchez-Alberola N, Campoy S, Erill I, Da Re S, Gonzales-Zorn B, Barbe J, Ploy M-C, Mazel D.


• Da Re S, Garnier F, Guérin E, Denis F, Ploy M-C.

• Hantz S, Couvreux A, Champier G, Trapes L, Cotin S, Bouazis S, Denis F, Alain S.
  “Conserved domains and structure prediction of human cytomegalovirus pUL27 protein”. Antiviral Therapy, 2009; 14: 663-672. IF: 4,322