## AGENTS INFECTIEUX, RÉSISTANCE ET CHIMIOTHÉRAPIE

Accueil > Programmes de recherche

## **RESEARCH PROJECTS**

The AGIR laboratory is interested in the development of **new anti-infective molecules**, possessing specific antimicrobial properties and/or capable of countering the phenomena of resistance linked to a lack of concentration of antibiotics within microorganisms (**analogs of siderophores, inhibitors efflux pumps**...).

The **team's research themes** revolve more specifically around 4 groups of infectious agents, found in clinical practice:

1.ESKAPEE bacteria(Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Actinetobacter baumannii, Pseudomonas aeruginosa, Enterobacter spp., Escherichia coli)

- 2. Mycobacteria (typical and atypical)
- 3. Plasmodium falciparum
- 4. BK virus

## A multidisciplinary approach

**Epidemiological and clinical research studies**(characterization of the biomolecular targets of epidemic strains),

Design and synthesis of new antibacterials, antimalarials and antivirals of a heterocyclic and/or peptide nature(siderophore analogues, antimicrobial peptides (AMP), arylamino alcohols, etc.),

Physicochemical evaluation and study of structure-activity relationships (SAR) in silico,

*In vitrobiological evaluation*(efficacy, cytotoxicity, transmembrane passage) thanks to the development of **cellular models** and study of the mechanisms of action using **biomolecular approaches** (commercial or clinical strains, etc.),

**Biological evaluation** *ex vivo* and *in vivo* on animal models(efficacy, toxicity, pharmacokinetics, pharmacodynamics).