vivexia
securing healthcare innovation

Acinetobacter baumannii (CRAB) – Pneumonia

Procedure Summary

- New Zealand rabbits, weighing around 3kg
- *Acinetobacter baumannii*
  - Wild-type strain (ATCC 17978)
  - Carbapenem Resistant (CRAB) clinical strains
- Neutropenic status induced by 3 intravenous (IV) administrations of cyclophosphamide at D-4, D-3 and D-2; 50mg/kg
- Intra-tracheal bacterial challenge
- Reference compounds: Meropenem (2g/8h), Rifampin (25mg/kg/q8h), rifampin combined with Meropenem, 5h post infection
- Simulated human dosing (PK) for 48h

Experimental readouts

- Pharmacokinetics
- Bacterial burden in lung tissue and spleen
- Weight loss
- Gross pathology of lungs, Lung Weight / Body Weight
- Clinical disease severity score
- Survival rate

Optional Services

- Broncho Alveolar Lavage Fluid
- Histology
- Cytokine and chemokine analysis
- Immune cell counts

Animal Welfare

- Each experimental protocol is approved by the local ethics committee for animal experimentation of Grand Campus Dijon (Burgundy, France) and performed in accordance with the current recommendations of the European Institute of Health EU Directive 86/609.

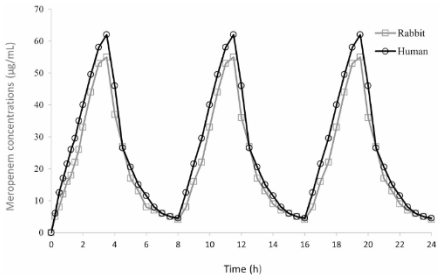
Facilities

- These assays are performed at our BSL2 laboratory / zootechnical center in Dijon, France

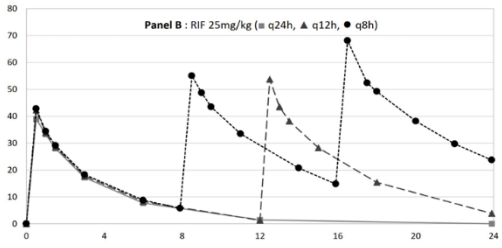
References

- *Albac et al.,* Microbiology Spectrum, 2024, Development of a new *Acinetobacter baumannii* pneumonia rabbit model for the preclinical evaluation of future anti-infective strategies.

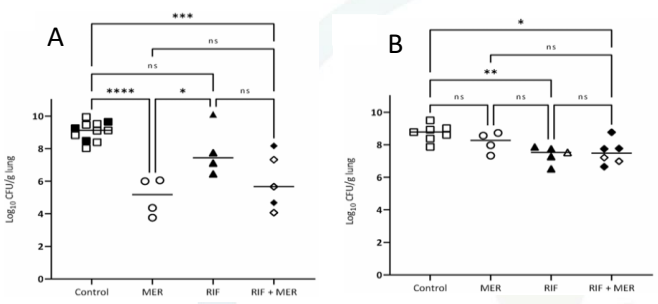
Concentration-time profiles of meropenem (expressed as the total fraction) in the serum of patients receiving a 2 g/q8h by a 3-h infusion (adapted from *Jaruratanasirikul et al.*) and in uninfected rabbits receiving a humanized dosing regimen



Concentration-time profiles of rifampin (expressed as the total fraction) in the serum of uninfected rabbits receiving a 25 mg/kg rifampin IV injection, administered q24h, q12h, or q8h.



Bacterial burden in lung tissue of neutropenic rabbits infected with the ATCC 17978 strain (A) or the CRAB turc2 strain (B) and receiving a human-simulated treatment with meropenem 2 g/8 h or rifampin 25 mg/kg/8 h for 48 h.



Our scientific team will readily accomodate client-specific alterations and will provide expert advice and guidance for your efficacy studies

For more information please contact : **info@vivexia.fr**