vivexia
securing healthcare innovation

Staphylococcus aureus (HA-MRSA PVL-/alpha toxin +) Necrotizing pneumonia

Procedure Summary

- Immunocompetent New Zealand rabbits
  - Clinical Hospital Acquired *S. aureus* strain (ST20120426 PVL-/ alpha toxin high producer)
- Intra-tracheal challenge
- Reference compounds
  - Antibiotics : vancomycin IV (continuous infusion), linezolid 600mg/12h IV, clindamycin 600mg/8H IV, ceftobiprole medocaril 500mg/8h IV
- Simulated human dosing (PK) for 48h

Experimental readouts

- Bacterial burden in lung tissue and spleen
- Weight loss, food intake
- Fever, Clinical disease severity score
- Survival rate
- Gross pathology of lungs, Lung weight / body weight
- Immune cell counts
- Histology
- Toxins quantification

Optional Services

- Broncho Alveolar Lavage Fluid
- mRNA expression
- Cytokine and chemokine analysis

References

- Croisier *et al.*, ECCMID 2017, P1357 « *In vivo* efficacy of ceftobiprole medocaril in two rabbit models of methicillin-resistant *Staphylococcus aureus* necrotizing pneumonia »

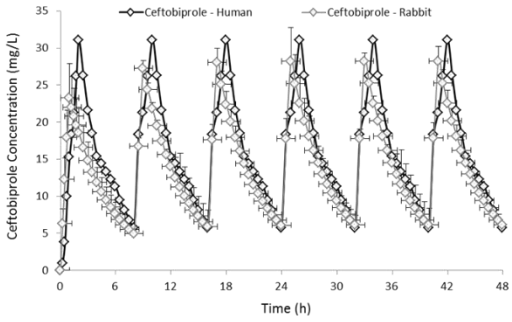
Animal Welfare

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

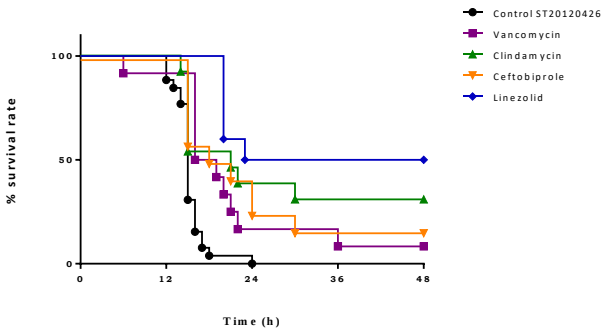
Facilities

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

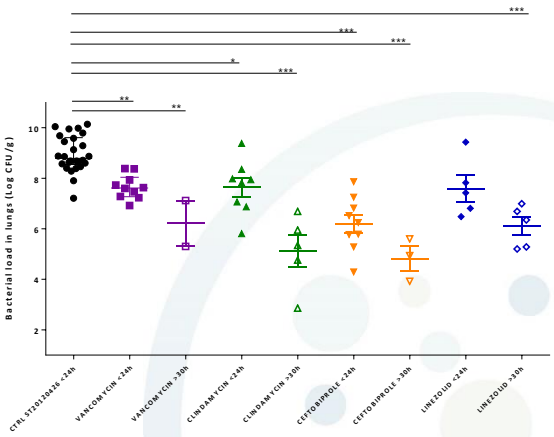
Concentration-time profiles in serum of rabbits for ceftobiprole medocaril at 500mg/8h after IV human dosing



Survival curves of HA-MRSA infected rabbits after treatment with vancomycin, linezolid, clindamycin or ceftobiprole medocaril versus controls.



Bacterial titers in lungs of untreated and antibiotic-treated rabbits infected with HA-MRSA *S. aureus*



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**