



Streptococcus pneumoniae (ceftriaxone-R & penicillin-R) Acute pneumonia

Procedure Summary

- Immunocompetent New Zealand rabbits
- *S. pneumoniae*
 - Wild-type strain (PSSP)
 - Penicillin intermediate (PISP) strain
 - Penicillin resistant (PRSP) and ceftriaxone resistant strain
- Intra-tracheal challenge
- Reference compounds : ceftriaxone 1g/24h IV or ceftaroline 600mg/12h 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

Optional Services

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

References

- Croisier *et al*, AAC 2011 « Ceftaroline versus Ceftriaxone in a Highly Penicillin-Resistant Pneumococcal Pneumonia Rabbit Model Using Simulated Human Dosing »

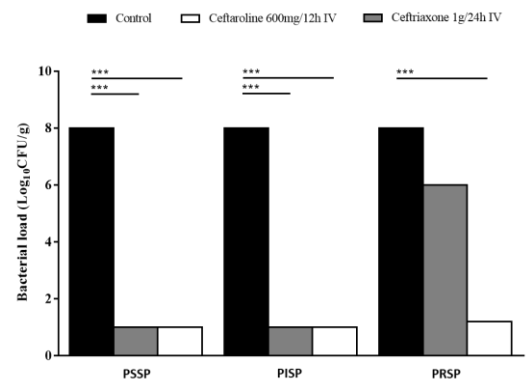
Animal Welfare

- 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.

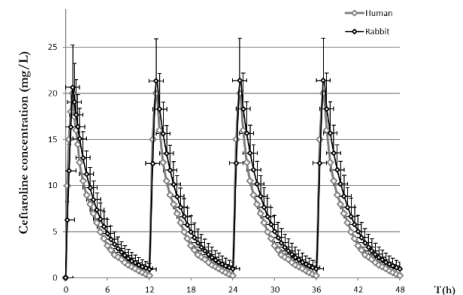
Facilities

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

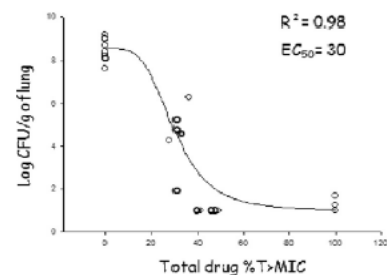
Bacterial titers in lungs of untreated and antibiotic-treated rabbits infected with different *S. pneumoniae* isolates



Concentration-time profiles in serum of rabbits for ceftaroline at 600mg/12h after IV human dosing



Relationship between the total drug levels of ceftaroline and the pharmacodynamic parameter %T>MIC for *Streptococcus pneumoniae* (all strains combined) with the residual bacterial concentration in the lungs after 48 h of therapy.



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

For more information please contact : info@vivexia.fr