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securing healthcare innovation

Pseudomonas aeruginosa (PAO1) – acute pneumonia

Procedure Summary

- Immunocompetent New Zealand rabbits
- *P. aeruginosa*
  - PAO1
  - MexXY efflux mutants : 11B (deleted) or MutGR1 (overexpressed)
- Intra-tracheal challenge (9.5 Log CFU)
- Reference compound : Tobramycin 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
- Morbidity and mortality
- Gross pathology of lungs
- Detection of resistant mutants

Optional Services

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

Reference

- Martha *et al*, CMI 2006 « In vivo impact of the MexXY efflux system on aminoglycoside efficacy in an experimental model of *Pseudomonas aeruginosa* pneumonia treated with tobramycin »

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.

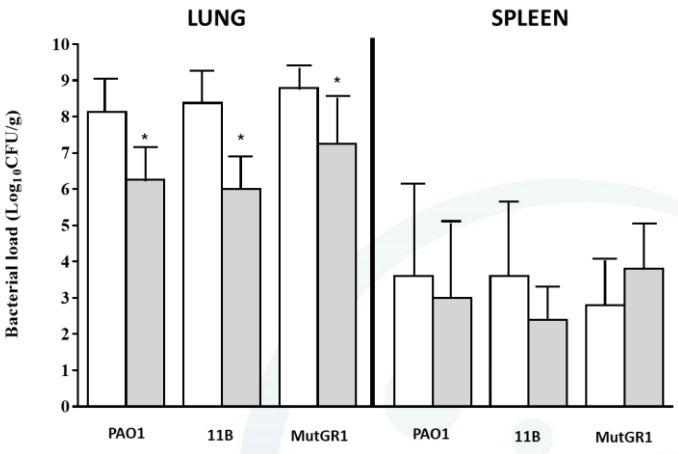
Facilities

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

***In vitro* characterization of *Pseudomonas aeruginosa* strains**

Strain	Relevant properties	MexXY efflux	MIC (mg/L) Tobramycin	Gentamicin	Ciprofloxacin
PAO1	Wild-type	Inducible	1	4	0.125
11B	*mexX* null	Non-functional	0.5	0.5	0.125
MutGR1	*mexZ* null	Overexpressed	2	16	0.5

Residual bacterial concentrations in lung and spleen of rabbits infected with *Pseudomonas aeruginosa* strains exhibiting various expression levels of the MexXY efflux system



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**