



Staphylococcus aureus (MRSA ATCC 43300) Catheter-associated biofilm infection

Procedure Summary

- Immunocompetent BALB/c mice, eight weeks old females
- Clinical PVL-negative Methicillin-resistant *Staphylococcus aureus* (MRSA) strain (ATCC 43300)
- **Early biofilm model (24h)**: Initiation of treatment on D1 post-infection
- **Mature biofilm model (72h)**: Initiation of treatment on D3 post-infection
- Cutaneous and subcutaneous incision to place 1cm-long catheter
- Bacterial challenge onto catheter
- Standard of care: Rifampicin (IP) + Daptomycin (IP) – 5^{1/2} days of treatment

Experimental readouts

- Bacterial counts on catheter – evaluation of biofilm
- Weight loss
- Survival rate
- Clinical score
- Detection of resistant mutants

Optional Services

- Pharmacokinetics
- Microscopy (staining of catheter parts)

Literature / reference

- Tasse *et al.*, Pathog. Dis. 2016. « Preliminary results of a new antibiotic susceptibility test against biofilm installation in device associated infections : the Antibiofilmogram®. »
- Internal data

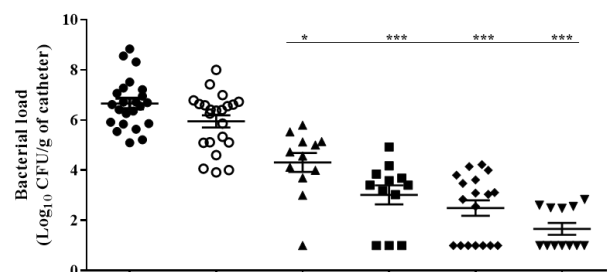
Animal Welfare

- 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

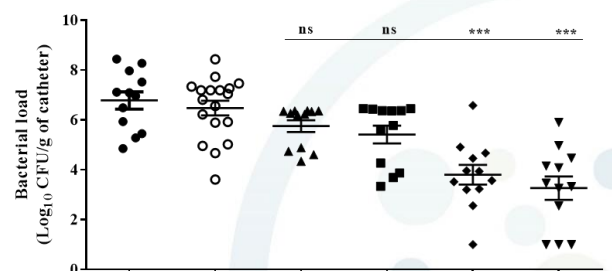
Facilities

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

Therapeutic efficacy of test compound or standard antistaphylococcal agents against 24h (top panel) and 72h (bottom panel) biofilms of MRSA in the mouse model of catheter associated infection after 5.5 days treatment ($p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$).



- Control infected Vehicle D1 or D3
- Control infected Vehicle D6 or D8
- Test compound 50mg/kg bid po
- Daptomycin 120mg/kg qd ip
- Rifampicin 30mg/kg bid ip
- Daptomycin 120mg/kg bid ip + Rifampicin 30mg/kg bid ip



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