Challenge Whole Body Plethysmography IC S_CHL_003

Purpose

The purpose of this procedure is to record the respiratory function of mice, with a LPS challenge, by means of Unrestrained Whole-Body Plethysmography, using a lipopolysaccharides (LPS) challenge.

Description: Spontaneous bronchospasm after LPS challenge

Experimental Design

- **Minimum number of animals**: 6M + 6F
- **Age at test**: Week 13
- **Sex**: We would expect the results of this test to show sexual dimorphism

Equipment

1. Flow chambers
2. Plethysmographs
3. Computer connected to flow chamber
4. Challenge reagents
5. Personal safety equipment (masks, gloves, etc.)

Procedure

1. Before starting, calibrate the plethysmographic chambers
2. Freshly prepare a 200 µg/mL LPS (O55:B5 serotype) solution in sterile saline (NaCl 0.9 %).
3. Inject 50 mg/kg ketamine and 3.3 mg/kg xylazine to mice in 100 µL volume by intraperitoneal injection
4. Administrate 25 µL of LPS solution (5 µg / mice)
5. Mouse are next placed in decubitus on a heated plate during 10-15 min
6. Place mice in the chambers
7. Start the experimental recording phase (6 hours)
8. Remove mice from chambers and place back in the home cages.

Parameters and Metadata
Frequency of breathing \((f)\)  
ICS_CHL_001_001 | v1.0  

**Unit Measured:** bpm  
**Increments:** Minimum 1

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Tidal volume \((TVb)\)  
ICS_CHL_002_001 | v1.0  

**Unit Measured:** ml  
**Increments:** Minimum 1

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Enhanced pause \((Penh)\)  
ICS_CHL_003_001 | v1.0  

**Increments:** Minimum 1
Procedure metadata:

**Start of challenge timestamp** ICS_CHL_004_001 | v1.0

Req. Analysis: false  
Req. Upload: true  
Is Annotated: false

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**End of challenge timestamp** ICS_CHL_005_001 | v1.0

Req. Analysis: false  
Req. Upload: true  
Is Annotated: false

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**Experimenter ID** ICS_CHL_006_001 | v1.0

Req. Analysis: false  
Req. Upload: false  
Is Annotated: false

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**Equipment ID** ICS_CHL_007_001 | v1.0

Req. Analysis: false  
Req. Upload: true  
Is Annotated: false

Options: Whole body unrestrained plethysmograph,
**Equipment manufacturer**  ICS_CHL_008_001  | v1.0  
procedureMetadata

**Options:** EMKA Technologies,

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**Equipment model**  ICS_CHL_009_001  | v1.0  
procedureMetadata

**Options:** PLY3211,

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**Duration of challenge**  ICS_CHL_010_001  | v1.0  
procedureMetadata

**Unit Measured:** min

**Options:** 360,

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**Date equipment last calibrated**  ICS_CHL_011_001  | v1.1  
procedureMetadata