
Lipopolysaccharide-induced bladder inflammation

Model's advantages:

- The endotoxin lipopolysaccharide is extensively used in the development of many organ specific inflammatory disease models.
- The intravesical LPS infusion induces similar pathophysiology features observed in patients with interstitial cystitis
- LPS damages the urothelium and produces a marked bladder overactivity involving the stimulation of C-fiber afferent
- Useful to evaluate the effect of a drug in chronic inflammatory conditions

Species: rat

Pathophysiological features:

- Abnormal bladder function; cystometrogram displays a decrease in intercontraction interval and a decrease in bladder capacity
- inflammatory cell (polymorphonuclear neutrophils) infiltration in the bladder wall

Summarized methodology:

Bladder inflammation is induced by intravesical infusion of protamine sulphate (PS, 10 mg/ml) during 1 hour in order to alter mucosal permeability followed by intravesical infusion of lipopolysaccharide (LPS, 1 mg/ml) during another 1 hour. Bladder inflammation is transient, peaking 4 hours after PS/LPS instillation and resolving by 72 hours. Urodynamic evaluation can then be performed at the inflammatory peak.

<u>Related Pelvipharm bibliography:</u>
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Non disclosable information for confidentiality reasons

Links to applicable experimental skills:

- [Administration routes / regimen](#)
- [Plasma / urine / tissue collection](#)
- [In vivo experiments – conscious animals](#)
 - * Telemetry
 - * Metabolic cages
- [In vivo experiments – anesthetized animals](#)
 - * Urodynamic evaluation (cystometry)
- [Organ bath studies](#)
 - * Rat tissues
- [Biochemistry](#)
 - * Spectrophotometric assays
 - * Protein expression and activity
- [Histology/Morphometry](#)
 - * Histomorphology
 - * Histomorphometry
- [Immunohistologie/Immunofluorescence/Confocal microscopy](#)
 - * Immunohistology
 - * Immunofluorescence
 - * Confocal microscopy