

Streptozotocin-induced diabetic rats/mice (STZ)

Model advantages:

The rat / mouse model of diabetes mellitus induced by streptozotocin injections is one of the most widely used model of type I diabetes and mimics human pathological situation of decreased insulin production (untreated type I diabetes) or decrease tissue responsiveness to insulin.

Pathophysiological features:

Metabolic features:

- weight loss
- hyperglycemia
- Streptozotocin-induced pancreatic beta cells (insulin-producing cells) destruction
- Autonomic neuropathy

Cardiovascular features:

- Vascular endothelial dysfunction (aorta) (figure 1)
- Acceleration of atherosclerosis progression in [ApoE knockout mice](#)

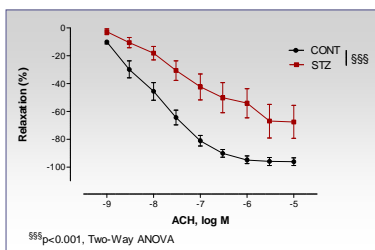


Figure 1: Comparison of endothelium-dependent relaxations in control and streptozotocin-induced diabetic rats obtained in in vitro experiments performed in aortic rings. (Pelvipharm, internal data).

Erectile function features:

- Impairment of endothelial and neurogenic relaxations of corpora cavernosa (figure 2)
- Penile autonomic neuropathy

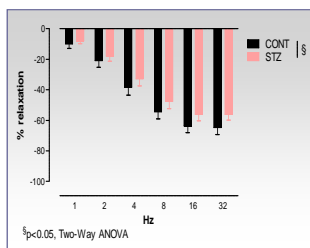
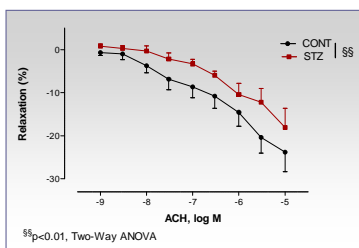


Figure 2: Comparison of endothelium-dependent and EFS-induced relaxations in control and streptozotocin induced diabetic rats obtained in in vitro experiments performed in cavernosal strips (Pelvipharm internal data)

Summarized methodology:

In rats or mice, streptozotocin intra-peritoneal injection(s) induces diabetes which is confirmed by determining blood glucose levels

Related Pelvipharm bibliography:

Non disclosable information for confidentiality reasons

Links to applicable experimental skills:

- [Administration routes / regimen](#)
- [Plasma / urine / tissue collection](#)
- [In vivo experiments – conscious animals](#)
 - * Telemetry
 - * Urine collection - Metabolic cages
 - * Tail cuff
- [Organ bath studies \(EFS / Pharmacological studies\)](#)
 - * Animal tissues
- [Biochemistry \(Plasma / Urine / Tissue\)](#)
 - * Spectrophotometric assays
 - * Protein expression and activity
- [Histology](#)
 - * Histomorphology
 - * Histomorphometry
 - * Oxydative fuorescence
- [Immunohistology / Confocal microscopy](#)
 - * Protein expression – immunohistochemistry / immunofluorescence
 - * Confocal microscopy