Measurement of blood pressure pressor response and endothelial reactivity in conscious animals (rat/mouse) using radiotelemetry

**Objectives:**
The use of implantable radiotelemetry allows blood pressure measurement of conscious, unrestrained animals. In addition, the chronic implantation of an intravenous catheter in rats allows the recording of pressor / dilator responses to various agents so as to evaluate endothelial function in vivo in conscious unrestrained animals (figure 1).

**Summarized methodology:**
The radio-telemetry transmitter (model TA11PA-C40 in rats or PA-C10 in mice, Data Sciences International, MN, USA) is implanted under inhaled isoflurane (2%). In rats, the right jugular vein can be catheterized to allow subsequent intravenous perfusions. The animals are allowed to recover one week after surgery before BP monitoring. On the day of recording, conscious unrestrained rats are allowed to acclimate to their new environment (30 min) before online recording of BP for 30 minutes. Subsequently, cumulative increasing doses of any vasodilator or vasoconstrictor agent can be i.v. delivered and pressor / dilator responses determined for each dose (figures 2 and 3).

**Endpoints:**
- Mean arterial pressure (baseline and response to i.v. injection)
- Diastolic arterial pressure (baseline and response to i.v. injection)
- Systolic arterial pressure (baseline and response to i.v. injection)
- Pulse pressure (baseline and response to i.v. injection)
- Heart rate (baseline and response to i.v. injection)

**NB:** Pelvipharm will gladly study the feasibility of evaluating blood pressure and pressor response in other experimental models to meet its client’s needs.

**Related Pelvipharm bibliography:**

**Links to applicable therapeutic areas / targeted disorders:**
- **Sexual pharmacology**
  - ED (Erectile Dysfunction)
- **Cardiovascular and metabolism pharmacology**
  - Hypertension
  - Metabolic syndrome
  - Atherosclerosis
  - Diabetes Mellitus