Introduction
The Göttingen minipig has become a routinely used species in regulatory toxicology. Many similarities between humans and minipigs justify the use of this species for non-clinical safety assessments. In the context of safety pharmacology core battery, cardiovascular (telemetry), respiratory (spirometry) and neurological (functional observation battery) investigations were conducted in Göttingen minipigs with various positive control drugs.

Materials and methods
Cardiovascular modulators (dopamine, remifentanil, esmolol, medetomidine and sotalol) were administered to freely moving animals monitored by telemetry (Data Science International). Intravenous methacholine was used as a respiratory modulator and respiratory function was monitored with a pneumotachometer (SCIREQ Respiratory Equipment). Ketamine, propofol, amphetamine and xylazine were used as positive control drugs for neurological evaluations.

Results
Safety pharmacology in the Göttingen minipig: cardiovascular, respiratory and neurological investigations
Simon Authier 1, 2, Raffi Mikaelian 1, Mylene Pouliot 1, Alexis Ascah 1, Eric Troncy 2 and Roy Forster 1
1 CIToxLAB North America, 445 Armand Frappier, Laval, Quebec, Canada and CIToxLAB France, 27005 Evreux, France; 2 Faculty of Veterinary Medicine, University of Montreal, 3200 Sicotte, St-Hyacinthe, QC, Canada

Discussion
The minipig has gained increasing acceptance as a non-rodent species for regulatory toxicology studies. Our results illustrate cardiovascular, respiratory and neurological evaluations which can be conducted to fulfil ICH S7A requirements as part of safety pharmacology core battery testing. The minipig is recognized as a valuable model for dermal administration but this species may also be justified for oral, subcutaneous, IV injection or infusion toxicology studies.

Conclusion
In conclusion, our results suggest that the Göttingen minipig is a suitable species to fulfill all aspects of the safety pharmacology core battery.