Systolic blood pressure measurement

Since AngII is infused to generate vascular pathology, the measurement of blood pressure is a critical parameter that will be incorporated into the experimental design of each project to permit interpretation of results. The investigators currently have 4 Visitech BP-2000 machines that measure blood pressure in conscious mice using a computer controlled tail cuff compression system with an infra-red system for pulse detection. Frequently used by many investigators, this system measures blood pressure in mice with reproducible results.9-14 Presently, we are a beta testing site for a new Visitech machine that will have a stage for 6 mice (cf 4 on the BP-2000). If this application is funded, we have an Institutional commitment to purchase 2 of these new machines to accommodate the increased need for this measurement. For meaningful measurements of blood pressure, mice need to be acclimated to the machine. Our standard protocol is to measure blood pressure 5 days per week at the same time each day, as based on the recommendation of Visitech. We do not measure blood pressure on days in which mice are transferred to clean cages since we find that environmental changes generally provide erratic results. The stage platforms are heated to 37oC. Ten preliminary measurements are taken, and then 10 actual measurements are recorded. At least 5 successful measurements must be recorded with a standard deviation of < 30 for the data from an individual mouse to be included in daily measurements. Generally once the mice are trained, there is a >90% success rate of daily blood pressure measurements. Thirty-two mice may be measured successfully every hour using 2 machines with 4 mice per stage.