

Reference:

Christianson, Julie A., and Gerald F. Gebhart. "Assessment of colon sensitivity by luminal distension in mice." *Nature protocols* 2.10 (2007): 2624.

Equipment:

- PTFE-24 microbore tubing (ID $\frac{1}{4}$ 0.022 inch, OD $\frac{1}{4}$ 0.042 inch) or PE60 tubing (ID $\frac{1}{4}$ 0.03 inch, OD $\frac{1}{4}$ 0.048 inch)
- PE240 Intramedic polyethylene tubing (ID $\frac{1}{4}$ 0.066 inch, OD $\frac{1}{4}$ 0.095 inch)
- PVC rod, 5 cm long and 1 cm in diameter
- 27 G $\frac{1}{2}$ inch sterile hypodermic needle
- 4-0 silk sutures
- Razor blade

Balloon construction Punch multiple holes in the distal 0.5 cm of an approximately 7 cm length of PTFE-24 thin-wall tubing (or PE60 tubing) with a 27-G needle. (This allows alternative routes for gas to flow into the balloon in case the end of the tubing is occluded when placed inside the mouse colon.)

Stretch a 3 cm by 3 cm square of polyethylene plastic over the PVC rod to generate a cylinder 2 cm long and 1 cm in diameter. (The PVC rod is used as a mold to generate a plastic cylinder of appropriate dimensions for the colonic balloon. Stretching the plastic over the PVC rod increases the compliance of the balloon material, the diameter of which is greater than that of the mouse colon.)

Secure the plastic cylinder over the end of PTFE-24 thin wall or PE60 tubing with the silk sutures. (A tight knot is important to prevent slippage of the balloon off the end of the tubing and any leakage of gas from the balloon.) Trim away excess plastic sheeting remaining proximal to the silk suture. With a razor blade, slice a 6.0 cm piece of PE240 tubing lengthwise down one side to make a protective sleeve for the balloon. Slide the PE240 tubing down over the balloon.

(The PE240 tubing provides a sheath surrounding the balloon, whose girth it accommodates because of the cut made with the razor blade. This sheath is lubricated when the sheath-balloon is inserted trans-anally into the mouse colon and protects the balloon from damage and folding during insertion. The sheath is withdrawn from the colon, leaving the balloon in position for inflation of the colon.)