

Materials List for:

A Proboscis Extension Response Protocol for Investigating Behavioral Plasticity in Insects: Application to Basic, Biomedical, and Agricultural Research

Brian H. Smith¹, Christina M. Burden¹

¹School of Life Sciences, Arizona State University





Correspondence to: Brian H. Smith at BrianHSmith@asu.edu

URL: <https://www.jove.com/video/51057>

DOI: [doi:10.3791/51057](https://doi.org/10.3791/51057)

Materials

Name	Company	Catalog Number	Comments
Sucrose	Sigma-Aldrich	S9378-1KG	
Odorant Compounds (for example)			
1-hexanol	Sigma-Aldrich	471402-100ML	For additional examples
2-octanone	Sigma-Aldrich	W280208-800G-K	of odorants, see any of
heptanol	Sigma-Aldrich	51778-5ML	the papers on olfactory
geraniol	Sigma-Aldrich	163333-25G	processing from the
nonanal	Sigma-Aldrich	131210-100ML	Smith lab.
Hexane	Sigma-Aldrich	296090-1L	
Heavy mineral oil	Sigma-Aldrich	330760-1L	Make sure it's odorless.
Ethanol	Sigma-Aldrich	459836-1L	
Scintillation vials	Sigma-Aldrich	Z190535-1PAK	Use a small drill bit to bore a small hole in the cap of the vials.
Bee harness			Custom-made from 0.9 cm diameter plastic soda straws or hard plastic/metal tubing.
Duct tape			
Kimwipes	Sigma-Aldrich	Z188956-1PAK	
Wash bottles	Sigma-Aldrich	Z560847-3EA	For the 70% ethanol.
Dryer tubing			
FOR METHOD 1 ONLY			
20 ml disposable plastic syringes	Cole-Parmer	WU-07945-18	
15 mm filter paper circles	Sigma-Aldrich	Z274844-1PAK	
Pushpins			
Toothpicks			
FOR METHOD 2 ONLY			
Gilmont Micrometer syringe, 0.2 ml	Cole-Parmer	EW-07840-00	
Gilmont micrometer syringe tip	Cole-Parmer	EW-07841-00	
26 G 3/8" Leur hub hypodermic needles	Fisher Scientific	14-826-10	
1 cc tuberculin syringes (plastic/glass)	Sigma-Aldrich	Z181641-1EA OR Z192090-200EA	Glass tuberculin syringes are available, but plastic syringes are much less expensive and will work well for a limited number of uses.
Small rubber/silicone restrictors	Cole-Parmer	EW-95702-02	Made from 4.8 mm outer diameter silicone tubing or the rubber tips of the 1 cc syringe plungers.

Name	Company	Catalog Number	Comments
Parafilm	Sigma-Aldrich	P7793-1EA	
75 x 100 mm filter paper	Sigma-Aldrich	Z695106-500EA	
Direct Logic 05 Programmable Logic Controller	 Koyo Electronics Industries Co, Ltd		
1 mm, 4 mm, & 6 mm inner diameter PVC or silicone tubing	Cole-Parmer	Various	Cole-Parmer has a wide selection of suitable tubing.
Polypropylene connectors & leur fittings	Cole-Parmer	Various	Cole-Parmer has a wide selection of connectors and fittings for many tube sizes.
65 mm Correlated Flowmeter	Cole-Parmer	EW-03216-08	Aluminum with glass float; for liquids and gases, with valve.
OR			
Tetra Whisper 300 (Tetratek DW96-2) Aquarium Air Pump	 Aquacave	AE-TETRA-300	
LIF series Solenoid Valves for .042 " ID Tubing, Configuration "E"	 The Lee Company	LFAA1200118H	Neoprene, 430 SS, 302 SS, 280 mW
PC-Board 12VDC 70dB Piezo Buzzer	 RadioShack	273-074	