

Materials List for:

# Administering and Detecting Protein Marks on Arthropods for Dispersal Research

James R. Hagler<sup>1</sup>, Scott A. Machtley<sup>1</sup>

<sup>1</sup>USDA-ARS, Arid-Land Agricultural Research Center

Correspondence to: James R. Hagler at [james.hagler@ars.usda.gov](mailto:james.hagler@ars.usda.gov)

URL: <https://www.jove.com/video/53693>

DOI: [doi:10.3791/53693](https://doi.org/10.3791/53693)

## Materials

Name	Company	Catalog Number	Comments
Food storage container (for insect rearing)	Rubbermaid/Tupperware	Various sizes	Various manufacturers & vendors. Mesh fabric is glued in a window
Small volume nebulizer (Micro Mist)	Teleflex-Hudson RCI	1881	Available online and in medical supply shops. Other brands will work as well.
Microcentrifuge tubes, 1.6 ml w/ cap	Continental Lab Products	4445.X	Any similar type will work. We prefer brands that have easy to open lids.
Styrofoam storage box for microcentrifuge tubes (5x20 grid)	RPI Corp.	145746	This design is nice because it doesn't crowd the tubes.
Dispenser, repeater	Eppendorf	4982000322	Anything similar will help speed up the dispensing.
Pestles, plastic disposable tissue grinders, 1.5 ml	Kimble Chase	749521-1500	Available with various vendors. Pestles can be cleaned and autoclaved for reuse.
BD Falcon ELISA plates, 96-well (flat bottom)	BD	351172	
Ovation pipette, manual (20-200 µl)	VistaLab	1057-0200 or 1070-0200	Any similar type will work. This model is ergonomic.
Reservoirs, sterile reagent	VistaLab	4054-1000	Anything similar will work.
Electronic pipette, 8-channel (50-1,200 µl) (Biohit eLine)	Sartorius	730391	If you had to pick one electronic model, this size is most useful.
Electronic pipette, 8-channel (10-300 µl) (Biohit eLine)	Sartorius	730361	Anything similar will work.
Manifold, multiwell plate washer (8-position, straight)	Sigma-Aldrich	Z369802	Anything similar will work for manual plate washing.
Microplate reader with absorbance detection	Molecular Devices	SpectraMax 250	Anything similar will work.
Chicken IgG/IgY	United States Biological	I1903-15R	Also available from other sources
Egg whites	Grocery store	"All Whites", "Egg Beaters", etc.	Mix 5 ml with 95 ml dH <sub>2</sub> O for 5% solution
Tris (Trizma Base)	Sigma-Aldrich	T1503	2.42 g/L to make TBS
Sodium chloride (NaCl)	Sigma-Aldrich	S9888	29.22 g/L to make TBS and 8.0 g/L for PBS
Sodium phosphate dibasic (Na <sub>2</sub> HPO <sub>4</sub> )	Sigma-Aldrich	S0876	1.14 g/L for PBS
Potassium phosphate monobasic (KH <sub>2</sub> PO <sub>4</sub> )	Sigma-Aldrich	P5655	0.2 g/L for PBS
Potassium chloride (KCl)	Sigma-Aldrich	P9541	0.2 g/L for PBS

Tween 20, EIA grade	Sigma-Aldrich	P1379	Add 0.5 ml per L to PBS after salts are dissolved.
PBS with 1% BSA	Sigma-Aldrich	P3688	Mix 1 packet in 1 L dH <sub>2</sub> O
Anti-Chicken IgY (IgG) (whole molecule) antibody produced in rabbit (1:500)	Sigma-Aldrich	C6409	Mix 100 µl in 50 ml TBS
Dry Milk, Powdered or Fresh Milk (1%)	Grocery store		Mix 10 g with 1 L dH <sub>2</sub> O for 1% solution
Anti-Chicken IgY (IgG) (whole molecule)-Peroxidase antibody produced in rabbit (1:10,000)	Sigma-Aldrich	A9046	Mix 100 µl in 1 L of 1% milk
Anti-Chicken Egg Albumin antibody produced in rabbit (1:8,000)	Sigma-Aldrich	C6534	Dilute 125 µl in 1 L PBS-BSA
Goat Anti-Rabbit IgG Peroxidase Conjugate (1:2,000)	Sigma-Aldrich	A6154	Dilute 0.5 ml in 1 L PBS-BSA, then add 1.3 ml Silwet
Vac-In-Stuff (Silwet L-77) silicon-polyether copolymer	Lehle Seeds	VIS-01	Add as last ingredient
TMB Microwell One Component Peroxidase Substrate	SurModics	TMBW-1000-01	