

Materials List for

High-Throughput Assays of Critical Thermal Limits in Insects

David N. Awde¹, Tatum E. Fowler¹, Fernan Pérez-Gálvez¹, Mark J. Garcia¹, Nicholas M. Teets¹

¹Department of Entomology, University of Kentucky

Corresponding Author

David N. Awde
david.awde@uky.edu

Citation

Awde, D.N., Fowler, T.E., Pérez-Gálvez, F., Garcia, M.J., Teets, N.M. High-Throughput Assays of Critical Thermal Limits in Insects. *J. Vis. Exp.* (), e61186, doi:10.3791/61186 (2020).

Date Published

June 15, 2020

DOI

10.3791/61186

URL

jove.com/video/61186

Materials

Name	Company	Catalog Number	Comments
ARCTIC A40 Refrigerated fluid circulator (Programable temperature ramps)	Thermo Scientific; Waltham, MA	153-5401	
C922 Pro Stream Webcam	Logitech; Newark, CA	960-001087	
Circular adjustable steel clamp – 5.08 cm to 7.62 cm	Any	Any	
Clear acrylic tubing – 5.7 cm x 5.1 cm x 0.3 cm	United States Plastic Corp., OH	44036	
Clear acrylic tubing – 6.35 cm x 5.7 cm x 0.3 cm	United States Plastic Corp., OH	440515	
Clear acrylic tubing – 7 cm x 6.35 cm x 0.3 cm	United States Plastic Corp., OH	44041	
Clear silicone sealant	Any	Any	
Collection tube (15 ml)	Any	Any	
Cordless Drill	Any	Any	
Drosophila Funnel Monitor (DFM)	TriKinetics; Waltham, MA	DFM	Used to count the number of flies that fall through the funnel at a given time point
DAM data collection software	TriKinetics; Waltham, MA		Records data input from the DFM
Fly Storage Lid	FlySorter; Seattle, WA	FS-96LID-5PK	Used to load flies into the storage plate for the sCTmax assay
Fly Storage Plate	FlySorter; Seattle, WA	FS-96PLATE-5PK	Used to hold flies during in the sCTmax assay
Fly Food Tray	FlySorter; Seattle, WA	FS-TRAY-5PK	Used to keep flies on food after loading into the 96-well plate until the sCTmax assay
Glass funnel	Kimax	28950-75	75mm
Gutter guard	Any	Any	~0.5 cm diameter openings
Hacksaw	Any	Any	
Heratherm Thermo Scientific incubator	Thermo Scientific; Waltham, MA	OMS100	

Hose nylon adapters (2) – ¼ MNPT x 3/8	United States Plastic Corp., OH	61135	
Hot glue gun and glue	Any	Any	
Light Source	Any	Any	
Magnets	Any	Any	
OMEGA TC-08 Recorder and TC-08 Player Software	OMEGA; Norwalk, CT		
OMEGA thermocouple (Type T)	OMEGA; Norwalk, CT	5LRTC-TT-K-20-36	
Plastic funnel	Any	Any	2" diameter
Plastic tubing - 0.6 cm diameter	United States Plastic Corp., OH	62852	
Retort ring	Any	Any	2" diameter
Retort stand	Any	Any	
Retort three-prong clamp	Any	Any	
Rstudio			
Serial port connector (PSIU9)	TriKinetics; Waltham, MA	PSIU9	Intermediate connection between the DFM and computer, allows for multiple DFM connections
Styrofoam (2" thick)	Any	Any	
Tape	Any	Any	
Uninterrupted Power Supply (PS9-1)	TriKinetics; Waltham, MA	PS9-1	Power supply for the DFM and PSIU9
Weld-on #4 Acrylic Cement	United States Plastic Corp., OH	45737	