

Materials List for:

Automated Analysis of *C. elegans* Swim Behavior Using CeleST Software

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Materials

Name	Company	Catalog Number	Comments
REAGENT			
N2	Caenorhabditis Genetics Center (CGC)		<i>C. elegans</i> WT (ancestral).
OP50 <i>Escherichia coli</i>	Caenorhabditis Genetics Center (CGC)		Biosafety Level: BSL-1.
OP50-1 <i>Escherichia Coli</i>	Caenorhabditis Genetics Center (CGC)		Streptomycin resistant strain of OP50. Biosafety Level: BSL-1.
Streptomycin sulfate salt	Sigma-Aldrich	S6501	
Printed Microscope Slides	Thermo Fisher Scientific	Gold Seal Fluorescent Antibody Microslides: 3032-002	have two etched 10 mm diameter circles delineated by white ceramic ink
Nematode Growth Medium (NGM)	For 1 L: 17 g Agar, 3 g NaCl, 2.5 g Peptone, 1 mL 1 M CaCl ₂ , 1 mL 5 mg/mL Cholesterol in ethanol, 25 mL 1 M KPO ₄ buffer, 1 mL 1 M MgSO ₄ , H ₂ O to 1 L. Sterilize by autoclaving.		Stiernagle, T. Maintenance of <i>C. elegans</i> . WormBook, 1-11, doi:10.1895/wormbook.1.101.1 (2006)
M9 buffer	For 1 L: 3 g KH ₂ PO ₄ , 6 g Na ₂ HPO ₄ , 5 g NaCl, 1 mL 1 M MgSO ₄ , H ₂ O to 1 L. Sterilize by autoclaving.		Stiernagle, T. Maintenance of <i>C. elegans</i> . WormBook, 1-11, doi:10.1895/wormbook.1.101.1 (2006)
EQUIPMENT			
CeleST	Driscoll Lab, Rutgers University	<i>C. elegans</i> Swim Test	Open Source, see http://celestmod.github.io/CeleST/ and http://celest.mbb.rutgers.edu/
MATLAB	www.mathworks.com/downloads	MatLab version 2015b (best)	The CeleST version demonstrated here has best functionality with Mac OS 10.10 and MatLab 2015b. MATLAB 2015B introduced changes to how MATLAB handled graphics, including a new coding convention and syntax. These changes resolved an issue that couldn't be resolved elegantly (primarily because the internals of MATLAB really needed the major graphics overhaul implemented in MATLAB 2015B). For this reason, CeleST should always be run on MATLAB 2015B or later versions. However for users without access to MATLAB version 2015B or later (or MATLAB at all), we have created a CeleST program that doesn't need MATLAB on the computer at al. An installer is

			downloaded by the prospective user and then it installs itself onto the computer through a couple prompts like most programs.
Mac OS	www.apple.com	Version 10.10	Currently, CeleST has been ported to the major operating systems (Windows, Mac, and Linux). The current code can be run on any of the operating systems and there are versions for each operating system that don't even require users to have MATLAB to use CeleST (this version requires a large download). The Windows version has been tested the least and is most prone to bugs as such. Linux has been moderately tested. And Mac has been and continues to be tested extensively (primarily because it's the operating system in our lab).
Stereomicroscope	Zeiss	Stemi 2000-C	
Transmitted Light Base	Diagnostic Instruments	TLB 3.1	
Digital CCD Camera	QImaging	Rolera-XR Mono Fast 1394 (ROL-XR-F-M-12)	
Digital Video Recording Software	Norpix	Streampix Version 3.17.2	