

The Large-Scale Cultivation of Nematodes to Study Their Collective Behaviors

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Materials

Name	Company	Catalog Number	Comments
<i>Escherichia coli</i> and <i>C. elegans</i> strains			
<i>E. coli</i> OP50	Caenorhabditis Genetics Center	OP50	Food for <i>C. elegans</i> . Uracil auxotroph. <i>E. coli</i> B.
<i>lite-1(ce314); ljIs123[mec-4p::ChR2, unc-122p::RFP]</i>	author	ZX899	<i>lite-1(ce314)</i> mutant carrying the genes expressing ChR2 and RFP under the control of the <i>mec-4</i> and <i>unc-122</i> promoter, respectively
N2 Bristol	Caenorhabditis Genetics Center		Wild-type <i>C. elegans</i> strain
For worm cultivation			
Agar purified, powder	Nakarai tesque	01162-15	For preparation of NGM plates
All-trans retinal	Sigma-Aldrich	R2500	For optogenetics
Bacto pepton	Becton Dickinson	211677	For preparation of NGM plates
Calcium chloride	Wako	036-00485	For preparation of NGM plates
Cholesterol	Wako	034-03002	For preparation of NGM plates
di-Photassium hydrogenphosphate	Nakarai tesque	28727-95	For preparation of NGM plates
Dog food	Nihon Pet Food	VITA-ONE	For preparation of dog food agar medium
LB broth, Lennox	Nakarai tesque	20066-95	For culture of <i>E. coli</i> OP50
Magnesium sulfate anhydrous	TGI	M1890	For preparation of NGM plates
Petri dishes (60 mm)	Nunc	150270	For preparation of NGM plates
Potassium Dihydrogenphosphate	Nakarai tesque	28720-65	For preparation of NGM plates
Sodium Chloride	Nakarai tesque	31320-05	For preparation of NGM plates
Observation			
Computer	CT solution	CS6229	Windows10 Pro with Intel Xeon Gold 6238R CPU and 768 GB of RAM
CMOS Camera	Hamamatsu photonics	ORCA-Lightning C14120-20P	For data acquisition
CMOS Camera	Olympus	DP74	For data acquisition
Microscope with SZX-MGFP set	Olympus	MVX10	For data acquisition

x2 Objective lens	Olympus	MV PLAPO 2XC	Working distance 20 mm and numerical aperture 0.5
Shutter control			
Shutter	OptoSigma	BSH2-RIX	For controlling temporal pattern of light illumination
Shutter controller	OptoSigma	SSH-C2B-A	For controlling temporal pattern of light illumination
Temperature control			
Peltier temperature controller unit	VICS	WLVPU-30	For controlling humidity inside a Petri plate
UNI-THEMO CONTROLLER	Ampere	UTC-100	For controlling humidity inside a Petri plate
Data acquisition software			
HCIImage	Hamamatsu photonics		For data acquisition