

Materials List for:

Preparation and Testing of Impedance-based Fluidic Biochips with RTgill-W1 Cells for Rapid Evaluation of Drinking Water Samples for Toxicity

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Materials

Name	Company	Catalog Number	Comments
Fetal bovine serum	Life Technologies, Inc. www.lifetechnologies.com	16000-085	Store @ -20 °C. Thaw @ room temperature before use. Ingredient for complete L-15 cell culture media (10%).
Fibronectin, bovine plasma	EMD Millipore Corp. www.emdmillipore.com	341631-1 mg	Store @ -20 °C. Thaw @ room temperature before use. Mix with L-15 media for a concentration of 10 µg/ml and freeze @ -20 °C in aliquots. Use as substrate for biochips.
L-15 media without L-glutamine	Lonza www.lonzabioscience.com	12-700F	Basal media for cell culture and feeding biochips. Store at 6 °C.
L-15ex powdered media with phenol red	US Biological www.usbio.net	L1501	Media is weighed out in 60 mg aliquots in 0.1 dram vials and stored at 6 °C in foil pouches with dessicant packs. Nine month shelf-life. Mixed with 10 ml of water sample for testing in biochips.
PBS, w/o Ca ²⁺ or Mg ²⁺	Lonza www.lonzabioscience.com	17-516F	Store at room temperature. Used for rinsing media when trypsinizing cell culture flasks.
Trypsin, EDTA	Lonza www.lonzabioscience.com	CC-5012	Store @ -20 °C. Thaw at room temperature and use to trypsinize cell culture flasks.
T175 culture flasks	Fisher Scientific www.fishersci.com	12-565-30	Used for culturing RTgill-W1 cells.
Bleach	Chlorox www.chlorox.com		Diluted to 20% with millique or distilled water for cleaning ECIS chips. Any household bleach is acceptable.
70% ethyl alcohol			For disinfecting biohood surfaces and any materials being placed in biohood.
Rainbow trout gill cells (RTgill-W1)	American Type Tissue Culture Collection www.atcc.org	CRL-2523	Cells cultured and used for biosensor (seeding biochips).
GlutaMAX-1 Supplement, 200 mM	Lonza www.lonzabioscience.com	35050-061	Store at room temperature. Ingredient for complete L-15 cell culture media (1%).
Penn/Strep Stock 10K/10K	Lonza www.lonzabioscience.com	17-602E	Store @ -20 °C. Thaw @ room temperature before use. Ingredient for complete L-15 cell culture media (1%).
Pharmed BPT tubing	U.S. Plastic Corp. www.usplastic.com	57317	Cut in 27 mm sections and autoclaved. Used for seeding

			biochips with cells and as a closed loop between media changes.
Polycarbonate luer fittings for Pharmed tubing assemblies	Value Plastics	MTLS210-9	Secured to each end of cut Pharmed tubing for insertion into biochips.
20 ml syringes, slip-tip	VWR Scientific us.vwr.com	BD302831	Used for injection of cell suspension for seeding ECIS chips, as well as for feeding chips.
0.1 dram snap-cap polypropylene microvials	Bottles Jars and Tubes, Inc. www.bottlesjarsandtubes.com	30600	Used to store 60 mg aliquots of L-15ex powdered media.
60 mil Lexan fluidic ECIS biochips	Nanohmics, Inc. www.nanohmics.com		Custom-made by Nanohmics, Inc. RTgill-W1 cells will be injected into the biochips and seeded chips will be placed in ECIS reader for testing.
Autoclavable Plastic Instrument Box 17 1/2" x 7 3/4" x 2 3/8"	Medi-Dose EPS medidose.com	IB701	Used to store the following; autoclaved plugs, biochips that have been cleaned, seeded biochips.
Paper heat-seal sterilization pouches, 7 1/2" x 13"	CardinalHealth www.cardinalhealth.com	90713	Used for autoclaving tubing and fittings and plugs.
Quantos automated powder dispenser	Mettler Toledo www.mt.com	QB5	Automated dispensation of 60 mg aliquots of powdered L-15ex into 0.1 dram vials.
ECIS reader	Nanohmics, Inc. www.nanohmics.com		Custom-made by Nanohmics, Inc. Seeded biochip is inserted into the reader for conducting water toxicity testing.
3 x 5 metalized 2.5 mil polypropylene reclosable bags	Uline www.uline.com	S-16893	Packaging and storage for both seeded biochips and powdered L-15ex media vials.
Leatherman squirt ps4	Amazon www.Amazon.com		Used to open powdered media vials.
1 g silica gel desiccant packets	Uline www.uline.com	S-3902	Put in polypropylene bags with L-15ex powdered media vials to prevent the powder from picking up moisture.
Sterile 250 or 500 ml Nalgene bottles	Fisher Scientific www.fishersci.com	09-740-25C or E	Hold cell suspensions for seeding ECIS chips in biohood.
Plugs for biochips	Nanohmics, Inc. www.nanohmics.com		Custom-made by Nanohmics, Inc. Used to seal ports on biochips before storage at 6 °C.
Drains for ECIS biochips	Nanohmics, Inc. www.nanohmics.com		Custom-made by Nanohmics, Inc. Placed on 2 inner ports on biochips prior to insertion in ECIS reader. Allows for excess media to drain from channels during test injections.
Hemocytometer	Fisher Scientific www.fishersci.com	S17040	Needed for counting cells prior to adjusting cell suspension for injection into biochips.
Brightfield microscope w/ 10X objective	Leitz Labovert		Any brightfield microscope is acceptable.
Class II biological safety cabinet			Any class II biological safety cabinet where cell culture can be performed under sterile conditions is acceptable.
Microcentrifuge tubes, 0.6 ml	Fisher Scientific www.fishersci.com	02-681-311	Holds 1 ml of cell suspension prior to counting cells.

Slip 10 cc red syringes	Procedure Products, Inc. www.procedureproducts.com	S/49S 30-R	Withdraws 9 ml of test water sample and used to inject sample into biochip.
Slip 10 cc blue syringes	Procedure Products, Inc. www.procedureproducts.com	S/49S 30-B	Withdraws 9 ml of control water sample and used to inject sample into biochip.
½ oz. clear pet plastic jar w/ white ribbed lined caps	SKS Bottle & Packaging, Inc. www.sks-bottle.com	0605-30	Sample vials used for mixing L-15ex powder and 10 ml of water sample for testing.
50 ml sterile conical polypropylene centrifuge tubes	Fisher Scientific www.fishersci.com	12-565-269	Used to hold 40 ml aliquots of 10 µg/ml fibronectin at -20 °C.
NIDS ACE Acetylcholinesterase Inhibitor Detection Test	ANP Technologies, Inc. www.anptinc.com	ACE-400	Sensor designed for the rapid detection of pesticides in drinking water