

Materials List for:

## Colorimetric Paper-based Detection of *Escherichia coli*, *Salmonella* spp., and *Listeria monocytogenes* from Large Volumes of Agricultural Water

Bledar Bisha<sup>1</sup>, Jaclyn A. Adkins<sup>2</sup>, Jana C. Jokerst<sup>3</sup>, Jeffrey C. Chandler<sup>1</sup>, Alma Pérez-Méndez<sup>4</sup>, Shannon M. Coleman<sup>4</sup>, Adrian O. Sbdio<sup>5</sup>, Trevor V. Suslow<sup>5</sup>, Michelle D. Danyluk<sup>6</sup>, Charles S. Henry<sup>2</sup>, Lawrence D. Goodridge<sup>7</sup>

<sup>1</sup>Department of Animal Science, University of Wyoming

<sup>2</sup>Department of Chemistry, Colorado State University

<sup>3</sup>Department of Environmental and Radiological Health Sciences, Colorado State University

<sup>4</sup>Department of Animal Sciences, Colorado State University

<sup>5</sup>Department of Plant Sciences, University of California, Davis

<sup>6</sup>Department of Food Science and Human Nutrition, Citrus Research and Education Center, University of Florida

<sup>7</sup>Department of Food Science and Agricultural Chemistry, McGill University

Correspondence to: Bledar Bisha at [bbisha@uwyo.edu](mailto:bbisha@uwyo.edu)

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### Materials

| Name                          | Company                         | Catalog Number | Comments  |
|-------------------------------|---------------------------------|----------------|---|
| Agricultural water            |                                 |                | Irrigation water, produce wash water, well water, etc.  |
| Vinyl tubing                  | Wilmar                          | BN-CVT1005     | 1/4" inner diameter, 3/8" outer diameter, available at: <a href="http://www.wilmar.com">http://www.wilmar.com</a>   |
| Modified Moore Swab cartridge | Lumiere Diagnostics             |                | 11 1/2 cm in length and 4 1/2 cm in width, available at: <a href="http://www.lumierediagnosics.com">http://www.lumierediagnosics.com</a> . Alternatively, a non-disposable version of the cartridge can be used (refer to the text) |
| Cheesecloth                   | Chesapeake Wiper & Supply, Inc. | CC90           | Grade #90, 44 x 36 weave, available at: <a href="http://www.ragladly.com">www.ragladly.com</a>  |
| Household Bleach              | Various                         |                | Sodium hypochlorite concentration approx. 6%  |
| Sodium thiosulphate 5-hydrate | Mallinckrodt Baker Inc          | 8100-04        |   |
| Manifold                      | Built in-house                  |                | Optional, device can be constructed from PVC pipes and appropriate fittings   |
| Peristaltic pump              | Micron Meters                   | RPP1300        | Available at: <a href="http://www.micronmeters.com">http://www.micronmeters.com</a>   |
| Serological pipette           | Various                         |                | Disposable, 10 ml   |
| Universal preenrichment broth | Difco                           | 223510         |   |
| Buffered peptone water        | Difco                           | 218105         |   |
| Salmonella supplement         | Biomérieux Industry             | 42650          | <a href="http://www.biomerieux-usa.com">http://www.biomerieux-usa.com</a>   |
| VIDAS UP Listeria (LPT) Broth | Biomérieux Industry             | 410848         | <a href="http://www.biomerieux-usa.com">http://www.biomerieux-usa.com</a>   |
| Vancomycin                    | Sigma-Aldrich                   | 861987         | <a href="http://www.sigmaaldrich.com">http://www.sigmaaldrich.com</a>   |
| Pipet-Aid                     | Various                         |                | Drummond DP-110 used here   |
| Shaking incubator             | Various                         |                | Excella E25, New Brunswick Scientific used here   |
| Micropipette                  | Various                         |                | 10 µl, 1 ml   |
| Micropipette tips             | Various                         |                | Barrier, 10 µl, 1 ml  |
| 1.5 microcentrifuge tubes     | Various                         |                | RNase- and DNase-free   |

|   |                               |                |   |
|---|-------------------------------|----------------|---|
| Probe sonicator   | Q Sonica LLC                  | XL-2000 series |   |
| μPADs   | Avant                         |                | Wax printed 7 mm diameter circles, with 4 pt line thickness. Contact Dr. Charles Henry for additional information |
| HEPES [ <i>N</i> -(2-Hydroxyethyl)piperazine- <i>N'</i> -2-ethanesulfonic acid] | Sigma-Aldrich                 | H3375          |   |
| Bovine serum albumin  | Sigma-Aldrich                 | A8022          |   |
| Chlorophenol red-galactopyranoside (CPRG)                                       | Sigma-Aldrich                 | 59767          |   |
| 5-Bromo-4-chloro-3-indolyl-β-D-glucuronide (X-Gluc)                             | Sigma-Aldrich                 | B8174          |   |
| 5-bromo-6-chloro-3-indolylcaprylate (magenta caprylate)                         | Sigma-Aldrich                 | 53451          |   |
| 5-Bromo-4-chloro-myo-inositol phosphate (X-InP)                                 | Sigma-Aldrich                 | 38896          |   |
| Petri dishes, polystyrene 100 mm by 15 mm                                       | Various                       |                | Sterile   |
| Flat bed scanner  | Various                       |                | Xerox USB scanner   |
| ImageJ software   | National Institutes of Health |                | <a href="http://rsb.info.nih.gov/ij/">http://rsb.info.nih.gov/ij/</a>   |