Laboratory Procedure **MFLP-84**
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HEALTH PRODUCTS AND FOOD BRANCH

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IDENTIFICATION OF *SALMONELLA* SPECIES BY DYNABEADS™ ANTI-*SALMONELLA*

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1. APPLICATION

This method is applicable to the qualitative detection of *Salmonella* sp. in foods, animal feed and environmental samples. It is a suitable screening test, especially where followed up product action is not anticipated. When product-based compliance action is anticipated, and where stipulated, the Official Methods and HPB Method should be used for confirmation of results.

2. DESCRIPTION

This method has been shown to produce satisfactory results with naturally-contaminated foods for the detection of *Salmonella* sp. (8.3).

3. PRINCIPLE

The Dynabeads™ anti-*Salmonella* test offers a rapid culture technique based on the selective enrichment of *Salmonella* sp. directly from pre-enrichment broth cultures using the ImmunoMagnetic Separation (IMS) technology. The Dynabead™ test uses magnetically charged polystyrene beads with *Salmonella* specific polyclonal and monoclonal antibodies immobilized on their surfaces. When these beads are incubated with suspensions such as enrichment cultures, *Salmonella* cells bind to the beads via the immobilized antibodies. The *Salmonella*-bead complex is then separated from the sample using an externally placed magnet. After washing to remove unbound sample components the beads can be selectively plated on indicator media for identification of the *Salmonella*.

Dynabeads™ and Dynal MPC™ are trademarks of Dynal A.S. Oslo, Norway.

4. DEFINITION OF TERMS

See Appendix A of Volume 2.

5. COLLECTION OF SAMPLES

See Appendix B of Volume 2.

6. MATERIALS AND SPECIAL EQUIPMENT

The following media and reagents (1,3) are commercially available and are to be prepared and sterilized

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according to the manufacturers instructions. See also Appendix G of Volume 2 and references 8.1 and 8.2 for the formula for
individual media.

1) Dynabeads™ anti-*Salmonella* is available in two formats with sufficient reagent for either 50 or 250 tests,

2) The Dynal MPC™-M unit is required to perform the test,

3) Pre-enrichment, selective enrichment, isolation media and supplements (see MFHPB-20 and MFLP-75),

4) A sample mixer capable of tilt, swirl or rotational mixing is also required for this procedure. The Dynal sample mixer is available from Dynal, however, many standard laboratory mixers can be adapted for this protocol.

The above products are available from: Dynal, Inc., 5 Delaware Drive, Lake Success, N.Y.11042. Telephone (800) 638-9416, FAX (516) 326-3298, or E-mail: techserv@dynalusa.attmail.com

6. PROCEDURE

All other specific information related to either materials, equipment, and general procedures can be found in the package insert accompanying the product.

7. CONFIRMATION

All colonies exhibiting characteristic *Salmonella* morphology on selective agar should be biochemically and serologically confirmed following the instructions of MFHPB-20 (8.1) and MFLP-75 (8.2).

8. REFERENCES

8.1 D'Aoust, J-Y. and U. Purvis. 1998. Isolation and identification of *Salmonella* from foods. Health Protection Branch MFHPB-20. In: Compendium of Analytical Methods, Volume 2. http://www.hc-sc.gc.ca/food-aliment/english/publications/compendium/index.html

8.2 Poppe, C., E. D. Mann, J. Oggel and D. Warburton. 1995. Procedure for the Isolation of *Salmonella* species by Modified Semi-Solid Rappaport-Vassiliadis (MSRV) Method: MFLP-75. In: Compendium of Analytical Methods. Volume 3. http://www.hc-sc.gc.ca/food-aliment/english/publications/compendium/index.html

8.3 Shaw, S. J., B.W. Blais and Dev C. Nundy. 1998. Performance of Dyna-beads Anti-*Salmonella* System in the Detection of *Salmonella* sp., in Foods, Animal Feeds, and Environmental Samples. J. Food Prot., **61**:1507-1510.