

METHOD SUMMARY – QWI-FM0048



Method Title	VIDAS UP – Listeria (LPT)		
Document number	QWI-FM0048	Date Issued	23 rd May 2018

Method External References	BioMerieux VIDAS UP Listeria (LPT) Ref 30 126		
	Norme Francaise (NF) Method certified NF Validation (BIO-12/33-05/12)		
	AOAC (OMA) AOAC Official Method of Analysis (OMA) (n°2013.10) approved protocols		
	AS/NZS 5013.24.1 Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of <i>Listeria monocytogenes</i> – Detection method (ISO 11290-1:1996, MOD) Modification – OXOID Microbact 12L used for the differentiation and confirmation of <i>L. monocytogenes</i> rather than CAMP test		
Matrix	All food products		
ALS Department	<input type="checkbox"/> Pharmaceutical Chemistry <input type="checkbox"/> Water Microbiology <input checked="" type="checkbox"/> Food Microbiology <input type="checkbox"/> Pharmaceutical Microbiology <input type="checkbox"/> Food Chemistry		
Accreditation Status	<input type="checkbox"/> NATA <input checked="" type="checkbox"/> NON-NATA <input type="checkbox"/> N/A		
Analysis technique	<input type="checkbox"/> HPLC <input type="checkbox"/> GC <input type="checkbox"/> Wet Chemistry <input type="checkbox"/> Physical <input type="checkbox"/> Gravimetric <input type="checkbox"/> Qualitative <input type="checkbox"/> Pour Plate <input type="checkbox"/> Spread Plate <input type="checkbox"/> MPN <input type="checkbox"/> Filtration <input type="checkbox"/> Petrifilm <input type="checkbox"/> EHS <input type="checkbox"/> ELISA <input checked="" type="checkbox"/> VIDAS UP <input type="checkbox"/> VIDAS <input type="checkbox"/> Other (please specify): _____		
Method Scope	<p>This method describes the steps for the recovery of <i>Listeria</i> organisms in human and animal food products and production hygiene swabs using VIDAS UP <i>Listeria</i> (SPT) assay.</p> <p>This method hasn't been verified to AOAC (OMA) for analysis of composite samples and therefore can only be used for 25 g samples.</p> <p>The current classification of the genus <i>Listeria</i> includes six (6) species that are non-spore forming, short, motile, Gram-positive rods. These organisms are catalase-positive, oxidase-negative, hydrolyse aesculin and ferment glucose without gas production. They can grow at wide temperature and pH ranges and can tolerate high concentrations of sodium chloride.</p>		
Method Principle	<p>25 g of samples are enriched with 225 mL of LPT broth and incubated at 30 °C for 26-30 hours. After enrichment, the broth is heated either using VIDAS Heat n' Go or in a waterbath at 95-100 °C for 5 minutes prior to initiating the VIDAS Run. Different enrichment volumes are required for hygiene swabs.</p> <p>VIDAS UP <i>Listeria</i> (LPT) is an enzyme immunoassay for use on the VIDAS family of instruments for the detection of <i>Listeria</i> using the Enzyme Linked Fluorescent Assay (ELFA) method.</p>		

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	<p>The Solid Phase Receptacle (SPR) serves as the solid phase as well as the pipetting device. The interior of the SPR is coated with proteins specific for <i>Listeria</i> receptors adsorbed on its surface. Reagents for the assay are ready-to-use and pre-dispensed in the sealed reagent strip. All of the assay steps are performed automatically by the instrument. The reaction medium is cycled in and out of the SPR several times.</p> <p>Part of the enrichment broth is dispensed into the reagent strip. The receptors present will bind to the proteins specific for <i>Listeria</i> receptors coating the interior of the SPR. Unbound sample components are eliminated during the washing steps. The proteins conjugated to the alkaline phosphatase are then cycled in and out of the SPR and will bind to any <i>Listeria</i> receptors, which are themselves bound to the specific proteins on the SPR wall. Further wash steps remove unbound conjugate.</p> <p>During the final detection step, the substrate (4-Methyl-umbelliferyl phosphate) is cycled in and out of the SPR. The conjugate enzyme catalyses the hydrolysis of this substrate into a fluorescent product (4-ethyl-umbelliferone). The fluorescence of which is measured at 450 nm.</p> <p>At the end of the assay, results are automatically analysed by the instrument, which calculates a test value for each sample. This value then compared to internal references (thresholds) and each result is interpreted (positive, negative).</p> <p>Presumptive results are confirmed using traditional biochemical reactions or MALDI-TOF procedure (QWI-FM0068)</p>
Reporting Unit	<p><i>Listeria</i> species Detected / Not Detected in X g/X mL of product or swab</p> <p><i>Listeria monocytogenes</i> Detected / Not Detected in X g/X mL of product or swab</p>
LOR/LOQ	Presence or Absence

Minimum amount of sample required for analysis	25 g or 1 swab	Turnaround time	2 days
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