Rapid and Early Detection and Molecular Serotyping of *Listeria monocytogenes* in Milk and Milk Products in Sri Lanka

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Abstract: From a public health standpoint, it is extremely important to identify the contaminated food vehicle and remove it from food distribution channels as rapidly as possible. A rapid PCR method was developed for early detection and molecular serotyping of *L. monocytogenes* in dairy products. This method includes Modified DNA extraction procedure to remove the PCR inhibitors and followed by a nested PCR to increase the sensitivity of the detection. This method of detection was found to be more reliable and easy to perform compare to the conventional method thus would reduce additional morbidity and mortality of human cases of listeriosis. Outbreak investigations offer unique opportunities to identify the source of contamination of implicated foods, to learn more about the transmission of *L. monocytogenes* in humans, and to identify measures to prevent future cases and in view of this raw milk, pasteurized milk, Ice cream, curd, yoghurt and cheese samples were collected randomly from many parts of the country and tested by PCR for the presence of L. monocytogenes. Out of 266 samples, 78 became positives in which the highest number of *L. monocytogenes* (42%) detected from raw milk. This number (42%) is higher in comparison to other countries, which indicate hygienic conditions of milking, and the subsequent manipulations in the production line of the milk products are substandard in our country. Out of the total strains detected by PCR 61.51%, 11.53% and 4% belong to serotypes ½a, ½b and ½c, respectively. Most of these raw milk isolates represented serotypes (½a and ½b) previously been linked to multiple human listeriosis outbreaks. These results indicate the seriousness of the *L. monocytogenes* contamination in the dairy industry in Sri Lanka alarming the concerned authorities to take appropriate remedial measures to keep the situation under control. The nested PCR method developed here is cost effective and suitable for developing counties. First time in Sri Lanka the serotypes ½a and ½b circulating in the country were identified from the dairy products representing different parts of the country. This opens the avenue for more research on identifying more serotypes in circulation and to trace their lineage.