

Development of disposable dry-reagent biostrips of activated woven Bombyx Mori Silk fabric as biosensor for pasteurization test of milk

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Pasteurization of milk and milk products are essential which are tested by chemical methods using alkaline phosphatase enzyme. Non-pasteurized milk has alkaline phosphatases which cause intra-abdominal bacterial infections after drinking. Whereas in pasteurized milk, alkaline phosphatase is denatured by boiling or UV method. Therefore, milk industries test the milk after pasteurization using various chemical methods. Fibrous silk has a large surface area, high mechanical strength and good compatibility which are advantageous to use as a support for immobilization. Silk fibers in the form of woven fabric were used as a novel and inexpensive carrier for the immobilization of lipase from *Candida sp* and silk biomaterials are biocompatible and can be chemically modified through amino acid side chains to alter surface properties for immobilizing the cellular growth factors. Here, our objective was to detect the presence of alkaline phosphatase in the pasteurized milk by using disposable biostrips of activated woven Bombyx mori silk fabric which are prepared by immobilization of chromogen and substrate which give the instant color change from light blue to green if alkaline phosphates is present in milk sample. Thus, these simple dry-reagent biostrips of activated woven Bombyx mori silk fabric for detection of pasteurized milk which is a cost effective and rapid method of qualitative estimation of alkaline phosphatase in the milk samples as biosensor.

Biography

Kirti Rani has done M.Sc (2000) Ph.D. (2004) Biochemistry from Maharshi Dayanand University, Rohtak (INDIA) in the collaboration with Post Graduate Institute of Medical Sciences, Rohtak (INDIA). She has also worked as Ex-senior resident in Deptt. of Biochemistry, Post Graduate Institute of Medical Education & Research, Chandigarh, INDIA (2004-2007). She is Assistant Professor (II) in Amity Institute of Biotechnology, Amity University, Noida, INDIA (2008-till date). She is expertise in Enzyme Technology, Clinical Biochemistry & Nanotechnology. She has more than 35 international/ national publications including research articles/ books/ patents/ abstracts. She is also member, reviewer and editor of international/ national scientific societies and journals.

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