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Research article

SCREENING OF PATHOGENIC BACTERIA *E. COLI* FROM FRUIT JUICES AND MILK SHAKES COLLECTED FROM DIFFERENT LOCALITIES OF LAHORE BY MICROBIAL AND IMMUNOLOGICAL TECHNIQUES

Kausar Malik* and Juliana Kiran

Department of the Zoology, Lahore College for Women University Lahore, Jail Road, Lahore, Pakistan.

Few serotypes of *Escherichia coli* (*E. coli*) are most dangerous food-borne and water-borne pathogens that can also be causative agents of intestinal and extra-intestinal infections. *E.coli* is a known food-borne pathogenic bacterium that causes serious illnesses in animals as well as to human beings; such as abdominal pain, diarrhoea which usually leads to hemorrhagic diarrhoea and kidney failure etc. *E. coli* is a type of bacteria commonly found in the human intestinal tract and in human feces. This *E. coli* is only one of several mutant varieties of bacteria that are both pathogenic and antibiotic-resistant. *E. coli* is known to be present on fruits, vegetables, beef etc. There are 70 strains of *E.coli* that are associated for causing different illnesses from minor to major destruction. The present study was concerned with the screening of pathogenic bacteria with the help of microbial and immunological techniques. The pathogenic *E. coli* was isolated from fruit juices and milk shakes. Samples were cultured on three different media namely Tryptic Soy Broth (TSB) media, TSB agar media and EC media modified with novobiocin (selective media) for screening of food-borne pathogenic bacteria. The antibody was produced in rabbit and used for Dot blot and Enzyme Linked Immunosorbent Assays (ELISA) analysis of pathogenic *E.coli* 0157:H7, immunoassays results by using this polyclonal antibody were repeated by using monoclonal (commercial) anti-*E. coli* 0157:H7 to confirm specificity and reproducibility of immunoassays used in this study. It was found through the study that immuno-dot blot assay is a simple and rapid detection by which one can simply visualize reaction of the specific antibody to its antigen. ELISA are based on the measurement of an enzymatic reaction associated with immune complexes were also performed. Results were obtained from both microbial and immunological tests that confirmed the contamination of pathogenic *E. coli* in fruit juices and milk shakes. Extractions of DNA, RNA and proteins were also done which was an initial step towards future study of pathogenic bacteria at molecular level.

Key words: *Escherichia Coli,* Pathogenic, Immunological, Bacteria

Introduction

The present study was concerned with the screening of pathogenic bacteria with the help of antigen-antibody interaction. The pathogenic bacteria were isolated from fresh food samples (fruit juices and milk shake cultures by growth in media). Then sub-cultured on nutrient agar media, MacConkey.Agar (Mac Agar) and selective media for screening of food-borne pathogenic bacteria. The antibody was produced in rabbit to use it for Enzyme Linked Immunosorbent Assay (ELISA) and Dot-blot analysis. Unpasteurized milk, juice, and meat are potential sources of *E. coli*. Commercial juice should be always pasteurized, and juice concentrates are also heated sufficiently to kill pathogens. Fruits and

*Correspondence author Email: kausarbasit7576@yahoo.com