OBJECT AND SCOPE OF THE STUDY

From the foregoing review of literature, it is evident that enterococci had been studied from several angles by different workers and a plethora of literature is available on this subject. It is clearly revealed that the organisms are widely distributed in nature and are frequently encountered in various food materials. Their significance as indicators of the hygienic quality of the food material involved in the public health point of view is almost well recognised. However, considerable amount of uncertainty shrouds the question as to how far enterococci themselves can be considered as organisms harmless in nature. They have been isolated from food materials incriminated in several cases of food poisoning outbreaks in man. However, cultures which could elicit symptoms of food poisoning in man under experimental conditions and which may thus act as reference organisms in a study on enterotoxigenicity of enterococci, are not available at present. This situation calls for the necessity of screening a number of enterococci to locate a potential food poisoning strain. Traditionally two approaches are made in this comparatively difficult task of detection and study of a food poisoning organism. These are (1) identification of an organism by its ability to elaborate certain metabolic products such as haemolysin, coagulase, lecithinase, DNase etc. and (2) detection of their ability to induce accumulation of fluid inside ligated loops of rabbit ileum. Surprisingly enough it appears neither of these methods have been employed in the study of enterotoxigenicity of enterococci so far.

The study on the former was also prompted by the consideration that as pointed earlier while some of these metabolites like lecithinase
and haemolysin have been recognised as toxins, others like coagulase and DNase have shown high degree of correlation with enterotoxin production by staphylococci.

Production of gelatinase was considered since this constitutes one of the important characteristics of one group of enterococci viz. the *S. faecalis* var liquesfaciens and reported involvement of proteinase systems to toxigenicity.

The present study was hence undertaken with an object of -

1. Isolation and identification of enterococci,

2. Obtaining information on their toxigenicity with special reference to :
   a) production of gelatinase and its significance, if any, in regard to pathogenicity of the culture;
   b) production of coagulase or a plasma clotting factor;
   c) elaboration of a DNase, its nature and significance in regard to pathogenicity of enterococci; and
   d) production of other metabolic products like
      (i) Haemolysin
      (ii) Lecithinase

3. Production of enterotoxin as evidenced by the ability of a few strains to induce fluid accumulation inside ligated loops of rabbit ileum.

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