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STUDIES ON STAPHYLOCOCCAL ENTEROTOXINS

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DEDICATION

To my late Father , my Mother ,
my Wife and my Children , for
their love and devotion they gave me.

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INTRODUCTION

INTRODUCTION

Staphylococcus aureus is a common inhabitant of animal and human body. Thus, there is an ample opportunity for contamination of foods with S. aureus, where it grows and produces hazardous substances known as enterotoxins.

Detecting the enterotoxigenic Staphylococci in foods is a helpful step in the way to determine the safety of foods and is desirable in the examination of S. aureus strains, since not all strains of S. aureus are enterotoxigenic. However, as a routine test, there is a great need to detect staphylococcal enterotoxins in foods that have been implicated in food poisoning outbreaks as well as in foods that are suspected for containing enterotoxins.

Although Staphylococci have been recognized as a major cause of food poisoning for about 45 years, scientific progress in this area was slow until 1950. Since then, investigations began to lead to the eventual chemical and physical characterization of enterotoxins and to the development of serological procedures for detection and quantitation of enterotoxins in foods.

Since the last decade, there is an increasing interest and much need, in Egypt, particularly by the health authority and research institutes, to investigate Staphylococcal enterotoxins in foods, and to apply this technique for the routine work in the Central Public Health Laboratories, because of its great effect on the economical and public health aspects.

The available methods for detection and quantitation of the enterotoxins depends on the use of standardized enterotoxins and their anti-enterotoxins, which are both very expensive and not generally available to achieve such goal. Therefore, this investigation aimed mainly to produce, purify, and standardizing Staphylococcal enterotoxins A and B and their respective anti-enterotoxins (specific antibodies), as a diagnostic reference reagents, to the local availability for the concerned health laboratories. Besides, Staphylococcal enterotoxigenicity of some strains of S.aureus were determined through various infected materials as foods in markets and some clinical specimens of food poisoning individual cases.