INTRODUCTION AND AIM OF THE WORK

The genus Pseudomonas has many characteristics which make it a suitable subject for genetic analysis. For many years, various species of this genus have been extensively studied for their metabolic properties, revealing a group of organisms with considerable biochemical interest. One species, Pseudomonas aeruginosa, is associated with a variety of human disease conditions, and many other species can be readily isolated from soil and water. Until recently, most of the genetic work on this genus has been carried out by using Pseudomonas aeruginosa (pyocyanea).

Historically, the selection of this species was made at a time when very little was known about genetic systems in bacteria other than E. Coli, Salmonella typhi murium, and the Pneumococci. Pseudomonas aeruginosa has many characteristics which make it a suitable choice for combined biochemical and genetic study, it does not have stringent growth requirements and will

grow on most of the common bacteriological media, including a chemically defined minimal media. As it is associated with a variety of human disease conditions, many different strains are usually available from any hospital, although it does not appear to act as a pathogen under laboratory conditions and, hence, stringent precautions to prevent laboratory infection are not required.

The other species which has attracted genetic attention is Pseudomonas putida, a saprophytic species, taxonomically distinct from Pseudomonas aeruginosa. It can be readily isolated from soil, and its ability to utilize a large variety of carbon and nitrogen sources has been extensively studied.

The purpose of the present study is to asses the current state of the genetic behaviour of Pseudomonas pyocyanea under the effect of different chemical mutagens. In this work the chemical mutagens

used were N-methyl-N-nitro-N-nitrosoguandine (MNNG) and acriflavine (Ac). The lethal effect of these mutagens on the wild strain of Pseudomonas pyocyanea was recorded and survivors of the organism were examined for isolation and characterization of mutants in the survived growth. The morphological, biochemical and antibiotic sensitivity of the isolated mutants were studied with comparison to the wild strain.