

## PREFACE

In our laboratory in the University Department of Zoology, Shivaji University, Kolhapur, India has been engaged in the study of salivary glands and their secretions. The mouse submandibular gland contains number of biologically active polypeptides such as epidermal growth factor, nerve growth factor, mesodermal growth factor, renin, kallikrein, lysozymes, glucagon, transforming growth factor- $\alpha$ , immunoglobulin etc. Most of these polypeptides are localized in and synthesized by the cells of granular convoluted tubules (GCTs) of submandibular gland.

The epidermal growth factor (EGF) is a single polypeptide having asparagin at the  $\text{NH}_2$ - terminus, arginine at the  $\text{COOH}$ - terminus with 53 aminoacid residues. The EGF contains cystinyl residues and no detectable free sulfhydryl groups. It is further characterized by the absence of three amino acids : lysine, alanine and phenylalanine. The EGF is a potent mitotic stimulant for a variety of cell types; it enhances keratinization and inhibits gastric acid secretion. It is widely used experimentally, not only in investigations of regulation of cell replication, but also as convenient tool for the analysis of receptor hormone interactions, an receptor mediated endocytosis of hormones. Brunner's gland located at the anterior region of duodenum also secrete epidermal growth factors like EGF.

The transforming growth factors (TGF) is comprised of two proteins, designated as TGF- $\alpha$  and TGF- $\beta$ . The TGF- $\alpha$  expression is not restricted to transformed cells or limited to embryonic tissues. TGF- $\alpha$  is best known as potent growth stimulator. A wide variety of other

biological effects have been described in all cell types and tissues. Most of the activities of EGF in the gastrointestinal tract will also be observed for TGF- $\alpha$ .

Epidermal growth factor is known to influence the integrity of gastric and duodenal mucosa and have systemic effect on gastric and duodenal ulcer repair.

In the light of above information, the present study was designed to investigate the role of salivary secretion on the integrity of duodenal mucosa. In the present investigation, we have studied gross morphology, ulcer index, structural changes in duodenal mucosa and alterations in glycoprotein contents in sialoadenectomized and also cysteamine administered mice. Cysteamine affects the Brunner's gland structure as well as functions; to find out whether salivary gland secretion protect duodenal mucosa or secretion from duodenal part are sufficient to protect duodenal mucosa, the present investigation is carried.