Immunohistochemical Expression Of Topoisomerase IIα in Benign and Malignant Salivary Gland Tumours

Thesis

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Aim of the study

The aim of the present study is to determine the expression of DNA topoisomerase IIα in benign and malignant salivary gland tumours and to correlate this expression with their histopathological features.

iii-List of Abbreviations

Abbreviations	Words
AgNoR	Silver nuclear organizer region
E. coli	Escherichia coli
EGFP	Enhanced green fluorescent protein
MEC	Mucoepidermoid carcinoma
N/C ratio	Nuclear/cytoplasmic ratio
PCNA	Proliferating cell nuclear antigen
PLGA	Polymorphous low grade adenocarcinoma
SCLC	Small cell lung cancer
Topo IIα	Topoisomerase IIα
WHO	World health organization

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Introduction

DNA undergoes conformational and topological changes during many cellular processes such as replication and transcription (Liu, 1989). DNA topoisomerases are ubiquitous enzymes; they resolve the topological problems which arise during the various processes of DNA metabolism including transcription, recombination, replication and chromosome partitioning during cell division (Osheroff et al., 1991; Gasser et al., 1992).

Topoisomerases are classified into two major types, topoisomerase I and topoisomerase II (Tan et al., 1992). Because of their vital functions in cell physiology, they have become targets of numerous chemotherapeutic drugs (Chen and Liu, 1994; Wang, 1994).

Type I topoisomerases are involved in transcription, whereas type II topoisomerases play an important role in DNA replication and mitotic events. Two isoforms encoded by different genes were identified for type II, topo IIα and topo IIβ. They do not only differ in their biophysical and biochemical properties but are also differentially regulated during the cell cycle (Capranico et al., 1992; Jenkins et al., 1992; Hwang and Hwong, 1994).

Danks et al. (1993) and Ishida et al. (1994) found that mutation of the gene encoding for DNA topoisomerase IIα (topo IIα) may influence