SUMMARY
Chapter-I:

INTRODUCTION.

In the introductory chapter the topic "A study on the role of thyroid hormone on oxidative stress during cholanthrene carcinogenesis" is introduced with emphasis on relationship of thyroid hormone with oxidative stress and carcinogenesis with special reference to the effect of thyroid hormone on oxidative stress during cholanthrene carcinogenesis and the effect of thyroid hormone on oxidative stress markers, metabolic markers, cancer markers, thyroid hormone profiles during carcinogenesis with relevant topics. The aims, objective and plan of the study are systematically presented.

Chapter-II:

REVIEW OF LITERATURE.

This chapter deals with the general review of literature on thyroid hormone, thyroid hormone and cancer, oxidative stress, free radicals and antioxidant system, thyroid hormone and oxidative stress and review on 3-methylcholanthrene with bibliographical records.

Chapter-III:

MATERIALS AND METHODS.

This chapter includes the plan of study dividing the test animals into normal, control and experimental groups and materials required for evaluation of various parameters. The methods for evaluation of
different biochemical parameters - Lipid peroxide (LPO), Protein peroxide (PPO), Catalase (CAT), Glucose, Cholesterol, Total protein, Triiodothyronine (T3), Tetraiodothyronine or thyroxine (T4), Thyroid Stimulating Hormone (TSH), Carcinoembryonic Antigen (CEA) and Alkaline Phosphatase (ALP) selected as probe for the study are described. The study of these parameters have been done at ten different days intervals for a period of 120 days as 10th, 15th, 20th, 25th, 30th, 45th, 60th, 75th, 90th and 120 day on whole blood and serum. Two parameters LPO and PPO in two different tissues - Liver and Stomach are estimated on 30th, 60th, 90th and 120 day of experiment.

Animals of the experimental groups were fed with daily dose of 50μl of 10μg thyroxine solution and administered intraperitoneally a single dose of 0.5 mg 3-methylcholanthrene in 0.25 ml (250μl) of castor oil.

Chapter IV:

EFFECT OF THYROXINE ON OXIDATIVE STRESS DURING CHOLANTHRENENE CARCINOGENESIS.

In this chapter, the effect of thyroxine on lipid peroxide in whole blood, liver and stomach tissue and protein peroxide in serum, liver and stomach tissue and antioxidant enzyme catalase activity in whole blood over a period of 120 days in normal, control and different experimental groups of test animals have been discussed. It includes introduction to the topic, materials and methods used for the study, results of the study with statistical analysis and graphical representation.
The analyzed results are interpreted and correlated with the literature available.

Significant increase in lipid peroxides and protein peroxides content in both blood and tissue are observed on administration of 3MC alone and 3MC and thyroxine together in the initial period with some variations in the later periods of experiment. Significant depression of catalase activity on 3MC administration but slight augmentations the enzyme activity by simultaneous administration of thyroxine and 3MC are observed.

Chapter-V:

**EFFECT OF THYROXINE ON SOME METABOLIC MARKERS DURING CHOLANTHRENE CARCINOGENESIS.**

This chapter deals with the effect of Thyroxine on some metabolic markers—Glucose, Cholesterol and Total protein in serum of different groups of animals to highlight the relationship between metabolic activity and carcinogenic process. It includes introduction to the subject, material and methods adopted for evaluation, results with statistical analysis and graphical representation. The analysed results are interpreted and correlated with the literature available.

On maintenance of a adequate thyroxine level in presence of 3MC, no drastic effect is observed on the catabolic parameters represented by glucose and cholesterol but significant augmentation of anabolic parameter protein is observed.
Chapter VI

**EFFECT OF THYROXINE ON THE THYROID HORMONE STATUS DURING CHOLANTHRENE CARCINOGENESIS.**

In this chapter the effect of exogenous thyroxine on endogenous T₃, T₄ and TSH during different phases and in different groups of animals have been studied to establish a relationship between thyroid hormone and induced carcinogenesis. This chapter includes an introduction to the subject, materials and methods used, results with statistical analysis and graphical representation.

Significant suppression of increased T₃ and T₄ content induced by 3MC alone is observed with simultaneous administration of 3MC and daily dose of Thyroxine.

The analysed results are interpreted and correlated with the supported references.

Chapter VII

**EFFECT OF THYROXINE ON SOME CANCER MARKERS DURING CHOLANTHRENE CARCINOGENESIS.**

This chapter deals with the effect of thyroxine on two cancer markers - CEA and ALP to denote the progression or regression of carcinogenesis in different groups of animals in different phases. It includes an introduction to the subject, materials and method used, results with statistical analysis and graphical representation, interpretation of the results with supported bibliography.
Significant increase in carcinoembryonic antigen content is observed with single dose administration of 3MC which however observed to be delayed with simultaneous administration of thyroxine with 3MC.

Chapter- VIII:

GENERAL DISCUSSION.

This chapter presents a comprehensive and correlative interpretation of the topic studied and presented in the thesis. The observations, interpretation and the discussed matters in different phases of the present study presented in the foregoing chapters of the thesis is discussed as an unified entity with an aim to present a logical and deductive information of the topic, “A study on the role of thyroid hormone on oxidative stress during cholanthrene carcinogenesis”.

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