CHAPTER - 6
CONCLUSION

From the above findings a clear picture may be drawn that consecutive treatment of thimet (phorate) for 13 (one sperm -atogenic cycle) and 26 days (two spermatogenic cycle) at the dose of 0.06 mg per 100 gm body weight per day has an antigonadal activity leading to inhibition of steroidogenesis and spermatogenesis. The inhibition of steroidogenesis by thimet was supported by the reduction of testicular and accessory sex glands’ weight, reduction in the steroidogenic enzyme (3β & 17β-HSD) activities, rise of testicular cholesterol content, reduction of acid phosphatase activity in testis and ventral prostate, fall of fructose content in the accessory sex organs i.e. prostate, seminal vesicle and coagulating gland, marked reduction of testicular content of ascorbic acid. The inhibition of spermatogenesis thimet was studied by the reduction of quantitative number of germ cell of all varieties i.e. Asg, mpLsc, pLsc, 7sd at stage VII of the spermatogenic cycle in seminiferous tubular epithelium and simultaneously with the fall of total sperm count in cauda epididymis. Though the total spermatogenic process is dependent in steroidogenesis and gonadotrophin release from adenohypophysis. The reduction in the seminiferous tubular diameter (STD) and Leydig cell nuclear diameter (LCND) again supported the inhibition of steroidogenesis and spermatogenesis by thimet treatment. The direct measurement of plasma testosterone and gonadotrophins (FSH & LH) again confirmed the antigonadal activity of thimet. The thimet may act directly on the testis though it is not
explained clearly here in the present thesis. But it may be claimed that HCG supplementation to thimet treated rats recovered the normal level of plasma testosterone but the spermatogenesis including all germ cells did not returned to normal level fully, which indicate the direct action of thimet on the testis. Again testosterone supplementation also produced partial recovery in spermatogenesis, which also indicates the possibility of inhibition in testicular steroidogenesis and direct action of thimet on the testis. The rise of alkaline phosphatase activity in the testis and prostate may also reveal the direct cytotoxic effect of thimet on the organs. The exogenous administration of HCG and testosterone to thimet treated rats produced partial recovery in the gonadal activities providing the additional indirect support to the interpretation of the supressive effect of thimet (phorate) on male reproduction in rat through reducing the gonadotrophin secretion from adenohypophysis and androgen synthesis in the testis.
THE PLAUCIBLE PATHWAY OF THIMET ACTION ON
MALE REPRODUCTIVE SYSTEM IN RAT