

TABLE OF CONTENTS

Biographical Sketch	iii
Dedication	iv
Acknowledgements	v
Table of Contents	vi
List of Figures	viii
CHAPTER 1: INTRODUCTION	1
RNA polymerase	2
Transcription	9
Stage I. Initiation	12
Stage II. Elongation	15
Stage III. Termination	16
The mechanism of intrinsic transcription termination	19
Transcription regulation in bacteriophage lambda	22
I. Bacteriophage λ Q	25
II. Previous study	28
CHAPTER 2: A POTENTIAL λQ BINDING REGION IN THE LARGEST SUBUNITS OF <i>ESCHERICHIA COLI</i> RNA POLYMERASE	31
Summary	31
Introduction	32
Results	34
Discussion	62
Materials and Methods	66

CHAPTER 3: RNAP MUTANTS IN THE β SUBUNIT THAT INHIBIT TRANSCRIPTIONAL ANTITERMINATION BY PHAGE λQ PROTEIN	
Summary	70
Introduction	71
Results	74
Discussion	98
Materials and Methods	106
CHAPTER 4: EVIDENCE OF λQ DIMERIZATION AND INTERACTION WITH GRE PROTEIN AND THE EFFECT OF MUTANT RNA POLYMERASES ON λQ ANTITERMINATION	
Summary	113
Introduction	114
Results	117
Discussion	127
Materials and Methods	135
APPENDIX	137
REFERENCES	141