CONTENTS

THE STATE A DIST	
SUMMARY INTRODUCTION	
SYNTHESIS OF ISOTHIOCYANATES	1
A) From heterocyclic reagents with ring cleavage	1
B) From heterocyclic reagents without ring cleavage	5
B) From neterocyclic reagons with the second	9
C) Miscellaneous synthesis of isothiocyanates	11
REACTIONS OF ISOTHTOCYANATES	
A) Addition-cyclization reactions involving and amino	11
or amido group	11
1. Reaction with amines	14
2. Reaction with amino alcohols	16
3. Reaction with amino acids and their derivatives	17
4. Reaction with hydrazines and hydrazides	20
B) Reactions with an activated C=C bond	22
C) Cycloadditions	22
1. [2+2] cycloaddition	23
2. [3+2] cycloaddition	25
3. [4+2] cycloaddition	26
D) Miscellaneous addition reactions	28
E) Miscellaneous reactions	28
1. Reaction with iminophosphorane	20
2. Reaction with lithated allenes and lithiated 1-	29
alkynes	23
3. Using in solution phase synthesis of a combinatorial	20
thiohydantoin library	30

DISCUSSION	
Aim of the work	32
Part I: Synthesis of 2-benzoyl-benzoyl isothiocyanate	33
Part II: Reactions of 2-benzoyl-benzoyl isothiocyanate	34
I) Reaction with schiff's bases.	34
II) Reaction with electron poor olefins.	37
A) Reaction of oxozinethione derivative 3a with urea-	
and thiourea.	40
B) Reaction of oxozinethinone derivative 3a with	
hydrazine hydrate.	42
C) Reaction of oxazinethione derivative 3b with urea	
and thiouurea.	45
D) Reaction of exazinethioune derivatives 3b with	40
hydrazine hydrate.	48
III) Reaction with phenyl isocyanate.	49
IV) Reaction with some nitrogen nucleophiles.	52
A) Reaction with anthranilic acid.	52
B) Reaction with glycine.	54
C) Reaction with benzoyl glycine.	55
Antimicrobial activity	58
FIGURES	
EXPERIMENTAL	62
REFERENCES	73
ARABIC SUMMARY	