TABLE OF CONTENTS

Contents	Page No.
Abstract	i-vi
Declaration	
Certificate	
Acknowledgments	vii-viii
Table of Contents	ix-xv
List of Tables	xvi-xvii
List of Figures	xviii-xxx
Abbreviations	xxxi-xxxiv
CHAPTER-I	
INTRODUCTION	1-30
1.1 neurodegenerative diseases- a concern for millions of people worldwide	1-4
1.1.1 Types of neurodegenerative diseases and current treatments	5-7
1.1.1.1 Alzheimer's disease	5
1.1.1.2 Parkinson's disease	5
1.1.1.3 Amyotrophic lateral sclerosis	6
1.1.1.4 Huntington's disease	7
1.1.2 Oxidative stress and neurodegenerative disorders	8-9
1.1.2.1. Neuroinflammation	8
1.1.2.2. Mitochondrial dysfunction	8
1.1.2.3. Release of Cytochrome c	9
1.1.2.4. Apoptosis	9
1.1.3 Challenges associated with current therapy	10
1.2 Neurotrophins: Role in neurological disorders and prospects	11-15
1.2.1. Neurotrophins and their receptors	11
1.2.2. Snake venom neurotrophins	12
1.2.3. Neurotrophins signaling pathways	13
1.2.4. Neurotrophins as therapeutics in NDs	14
1.2.5 Limitations of neurotrophins as a therapeutic in neurological	15
diseases	
1.3 Peptidomimetics and small molecules therapeutics	15
1.3.1 Neurotrophin's mimetics role in neurological diseases	15
1.4 Model organism for neurobiological studies	16-17
1.4.1. Rat pheochromocytoma (PC-12) cell as an <i>in vitro</i> model	16
1.4.2. Caenorhabditis elegans (C. elegans) as in vivo model	16

1.4.3. Micro-RNAs	17
1.5 Gap in the study	18
1.6 Objectives of this study	18
Bibliography	19-30
Contents TABLE OF CONTENTS	Page no.
CHAPTER II	
REVIEW OF LITERATURE	31-55
2.1 Therapeutic role of conventional neurotrophins	32-33
and neurotrophic factors (NTFs) derived from	
natural resources for treating neurodegenerative	
diseases	22
2.1.1 BDNF delivery as a therapeutic target for	32
PD and HD	22
2.1.2 NGF delivery as a therapeutic target for	33
AD	33
2.2 The challenges associated with the therapeutic application of conventional neurotrophins in	33
treating NDs	
2.3 Advantages of neurotrophin mimetic molecules	34
over parent neurotrophins as therapeutics	34
2.4 Trends in the discovery of therapeutic peptide	
2.5 Application of peptidomimetics as drug prototypes to treat NDs	35- 44
2.5.1. Peptide mimetics to NGF and TrkA receptor	36
2.5.2. Peptide mimetics to BDNF and TrkB receptor	36-38
2.5.3. Peptide mimetics to NT-3 and Trk-C receptor	38-40
2.6 Snake venom-derived peptidomimetics as therapeutics to treat	40
neurodegenerative disorders	45
	-
Bibliography	46-55