

# List of figures

Sl. no.	Description	Page no.
<b>Introductory Review</b>		
I.1.	Dr. Alois Alzheimer.....	5
I.2.	August Deter.....	5
I.3.	APP processing pathway.....	8
I.4.	A $\beta$ plaques in silver stained brain sections of patient AD.....	9
I.5.	Magnified view of an A $\beta$ plaque.....	9
I.6.	Magnified view of Neurofibrillary tangle.....	10
I.7.	Amyloid cascade hypothesis.....	12
I.8.	Schematic representation of autophagy.....	16
I.9.	Intrinsic and extrinsic pathways of apoptosis.....	22
I.10.	Inter-relationship between autophagy and apoptosis.....	24
I.11.	Molecular mechanism of crosstalk between autophagy and apoptosis.....	28
I.12.	Different roles of Trib family of proteins.....	31
I.13.	Structure of Trib3 protein.....	32
I.14.	Functions of the Tribbles3 protein.....	33
<b>Chapter I</b>		
C.1.1	Rat cortical neurons and hippocampal neurons die in response to A $\beta$ .....	66
C.1.2	Trib3 is induced in cortical neurons and in vivo following A $\beta$ treatment.....	67
C.1.3	Downregulating Trib3 by shRNA provides protection to cultured cortical and hippocampal neurons.....	69
C.1.4	Trib3 negatively regulates Akt.....	72
C.1.5	Feed forward loop acts between Trib3 and FoxO1.....	75
C.1.6	Trib3 regulates the pro-apoptotic gene bim.....	76
<b>Chapter II</b>		
C.2.1	Trib3 induces autophagy in neurons.....	91
C.2.2	Trib3 induces formation of autophagosomes in neuronal cells in response to A $\beta$	93

<b>Sl. no.</b>	<b>Description</b>	<b>Page no.</b>
C.2.3	Trib3 accumulates in PC12 neuronal cells in response to A $\beta$ .....	95
C.2.4	Trib3 causes impaired autophagic flux in neurons.....	97
C.2.5	Overexpression of Trib3 is sufficient to cause neuronal cell death.....	100
 <b>Chapter III</b>		
C.3.1	Cellular models used to study neurodegeneration.....	112
C.3.2	Induction of autophagy and apoptosis in neuronal PC12 cells upon withdrawal of NGF or A $\beta$ treatment.....	113
C.3.3	Selection of doses of Rapamycin and 3-Methyl Adenine that do not harm cells..	115
C.3.4	Inhibition of autophagy provides protection against NGF deprivation and A $\beta$ treatment.....	117
C.3.5	Neuronal cells are better protected from death evoked by NGF deprivation or A $\beta$ treatment when both autophagy and apoptosis are inhibited.....	118
C.3.6	Beclin1 is cleaved in response to NGF deprivation and A $\beta$ treatment.....	120
C.3.7	Downregulating Beclin1 protects neuronal cells against NGF deprivation and A $\beta$ treatment.....	123
C.3.8	Trib3 regulates Beclin1 in neuronal cells upon A $\beta$ treatment.....	125
 <b>Summary</b>		
S.1	Schematic representation of Trib3 mediated apoptotic neuron death in response to A $\beta$ .....	134
S.2	Schematic representation of Trib3 mediated autophagic neuron death in response to A $\beta$ .....	135
S.3	Schematic representation of crosstalk between autophagy and apoptosis.....	136