List of Figures:

Figure 2.1: Schematic representation of inflammatory mechanisms involved in PD pathogenesis.

Figure 2.2: Schematic representation of all possible mitochondria alteration in PD pathogenesis.

Figure 2.3: The established steps involved in autophagy.

Figure 2.4: Known pathways of miRNAs biogenesis.

Figure 2.5: The role of miRNAs in regulation of different step of autophagy.

Figure 3.1: Diagrammatic representation of hypothesis of the study.

Figure 5.1: TNF-α differentially regulate the expression of TNFR1 and TNFR2 and modulate cell death.

Figure 5.2: TNF-α sensitizes SH-SY5Y to cell death in PD stress conditions.

Figure 6.1: TNF-α induces mitochondrial oxidative stress and cell death.

Figure 6.2: TNF-α regulates mitochondrial complex-I activity in SH-SY5Y cells.

Figure 6.3.1: TNF-α modulates autophagy.

Figure 6.3.2: TNF-α modulates mitophagy.

Figure 7.1.1: TNF-α regulates miRNAs levels.

Figure 7.1.2: TNF-α regulates miRNAs expression targeting mitochondrial functions and modulate cell death.

Figure 8.1: miRNAs levels are altered in 6-OHDA induced Parkinson's disease stress model of SH-SY5Y.

Figure 8.2.1: KEGG pathways enriched for miRNAs.

Figure 8.2.2: miR-5701 inhibits the expression of genes involved in lysosomal function and degradation pathways.

Figure 9.1.1: miR-5701 regulates mitochondrial function.

Figure 9.1.2: Expression of miR-5701 increases mitochondrial DNA and transcripts.

Figure 9.2: miR-5701 regulates the fusion of auotphoagosme with lysosome.

Figure 9.3: miR-5701 sensitized 6-OHDA induced cell death.

Figure 10.1: Summary of role of miRNAs in inflammatory mediated PD stress condition.

Figure 10.2: Summary of role of miR-5701 in toxin mediated PD stress condition.