List of Figures

Figures	Title	page
1.1	Activation of pattern recognition receptors	1
2.1	Introduction to NLRs	4
2.2	Neuro-inflammation under brain pathologic conditions	7
2.3	Brief overview of the effect of depression and chronic alcoholism over gut-brain axis	10
3.1	Characterization of large silica nanoparticles(22nm) by scanning electron microscopy	31
3.2	Characterization of amorphous silica nanoparticles by transmission electron microscopy	31
3.3	MTT Assay for assessment of cell viability following nanosilica exposure	33
3.4	MTT assay for the assessment of cell death in the presence of cytochalasin-D	34
3.5	ASC expression was analyzed by immunofluorescence in epithelial cells	35
3.6	ASC expression was analyzed by immunofluorescence in endothelial cells	36
3.7	Nuclear localization of ASC	37
3.8	Quantification of ASC specks	38
3.9	Characterization of internalization of nanosilica and subsequent cell death	39-40
3.10	Activated caspase-1 expression in nanosilica treated microglial cells	41
4.1	Glioma classification and brain tumor microenvironment	44
4.2	Histopathological hallmarks of grade IV glioblastoma tissue sections	48
4.3	NLRP3 protein expression levels in different glial cell population in glioma tissue	49
4.4	ASC protein expression levels in different glial cell population in glioma tissue	50
4.5	AIM2 protein expression levels in different glial cell population in glioma tissue	52
4.6	NLRC4 protein expression levels in different glial cell population in glioma tissue	53-54
4.7	NLRP12 protein expression levels in microglial cell population in glioma tissue	55
4.8	Caspase-3 protein expression levels in different glial cell population in glioma tissue	56
4.9	ASC and NLRP3 protein expression grade III and grade IV glioma tissue	57
4.10	Cytokines levels of PDGF-BB in normal brain control, serum control, and glioma tissue protein samples	58
4.11	Cytokines levels of VEGF in normal brain control, serum control, and glioma tissue protein samples	59
4.12	Cytokines levels of MCP-1 in normal brain control, serum control, and glioma tissue protein samples	60
4.13	Cytokines levels of RANTES in normal brain control, serum control, and glioma tissue protein samples.	61
4.14	Cytokines levels of G-CSF and GM-CSF in normal brain control, serum control, and glioma tissue protein samples.	62
4.15	Cytokines levels of IL-1 β and IL-18 in normal brain control, serum control, and glioma tissue protein samples	63
4.16	Cytokines levels of IFN-γ and IL-6 in normal brain control, serum control, and glioma tissue protein samples	64
4.17	Cytokines levels IL-Ra and IL-17 in normal brain control, serum control, and glioma tissue protein samples	65
4.18	Cytokines levels of TNF- α and IL-8 in normal brain control, serum control, and glioma tissue protein samples	66