LIST OF FIGURES

Figures	Title	Page No.
Figure 1.1	Oligodendrocyte lineage	3
Figure 1.2	Sources of origin and migration of oligodendrocyte progenitors in a) spinal cord and b) telencephalon or forebrain	5
Figure 1.3	Glial cell migration in CNS and PNS	7
Figure 1.4	General Schematic Integrin signalling pathways	10
Figure 1.5	PDGF–PDGFR interactions	15
Figure 1.6	Genetic alteration that cause the dysregulation of PDGF receptors signaling in different tumors	22
Figure 1.7	PDGF-A activated signalling pathways in OPC migration	26
Figure 1.8	PDGF-A activated signaling pathways in C6 glioma migration	27
Figure 2.1	Oligodendrocyte Isolation and culture	28
Figure 2.2	Migration assays A) Agarose drop assay and B) Scratch migration assays	30
Figure 2.3	Full-length cDNA of mouse ERK1 subcloned into pcDNA3 vector	33
Figure 3.1	PDGF-A activates ERK signalling in OPC	49

Figure 3.2	PDGF-A activated ERK signaling regulates OPC migration	48
Figure 3.3	Knockdown of ERK in cultured Oligodendrocyte progenitor cells (OPCs)	50
Figure 3.4	Continuous exposure PDGF-A for 24hrs leads Oligodendrocyte progenitor cells proliferation.	51
Figure 3.5	PDGF-A reorganized actin cytoskeleton in OPC	51
Figure 3.6	PDGF-A activated ERK1/2 localization in cytoskeleton of OPC cultures	52
Figure 3.7	Interaction of pERK1/2 and Paxillin	53
Figure 3.8	PDGF-A induced FAK-Paxillin colocalization	53
Figure 3.9	PDGF-A induced pERK1/2-FAK-Paxillin interactions	54
Figure 4.1	ROCK signaling regulates OPC migration	63
Figure 4.2	Effect of treatment with ROCK inhibitor in ERK activation in OPCs	63
Figure 4.3	ROCK inhibition has no effect in OPC proliferation	64
Figure 4.4	ROCK inhibition does not affect OPC survival	65
Figure 4.5	ROCK inhibition regulates actin reorganisation and expression of myosin in OPC cultures	66
Figure 4.6	Effect of ROCK inhibition in FAK-	66

	Paxillininteractions	
Figure 5.1	PDGFR signaling regulates C6 glioma proliferation and survival	79
Figure 5.2	PDGFR signaling regulates C6 glioma migration through ERK1/2 and ROCK pathway.	81
Figure 5.3	Effect of PDGFR and ROCK inhibition on actin-myosin rearrangements in Rat C6 glioma.	82
Figure 5.4	Association of FAK with Paxillin and phosphorylated ERK1/2 in C6 glioma cells and its inhibition by AG1295	82
Figure 5.5	PDGFR inhibition in C6 glioma suppress sphere formation and colony formation in soft agar	83
Figure 5.6	Effect of AG1295 on adhesion and invasion property of C6 glioma cells	84
Figure 5.7	PDGFR Inhibition regulates gene expression in C6 glioma	85
Figure 5.8	Effect of ERK 1 over expression and ERK1/2 downregulation in C6 glioma	85
Figure 5.9	Effect of ERK1 overexpression of invasion and adhesion properties of C6 Glioma	86
Figure 5.10	ERK1/2 knockdown reduce the C6 glioma migration	87
Figure 5.11	Effect of Calcium Chelation in C6 glioma cell migration	88

Figure 6.1	PDGF-A induced ERK signaling pathway in OPCs	91
Figure 6.2	Effects of inhibiting signaling pathways in C6 glioma migration	92