LIST OF FIGURES

Figures	Title	Page
Figure 1	Rice blast symptoms	4
Figure 2	SUMO conjugation pathway	8
Figure 3	Infection cycle of Magnaporthe oryzae	16
Figure 4	Schematic representation of split-marker system.	21
Figure 5	Scheme to illustrate strategy for complementation construct	53
Figure 6	In silico analysis of MoSUMO protein of Magnaporthe oryzae and phylogenetic analysis	55
Figure 7	Functional complementation of <i>MoSUMO</i> in <i>S. cerevisiae</i>	68
Figure 8	Phenotype of site directed mutagenized transformant of <i>S. cerevisiae</i>	71
Figure 9	Cloning strategy for split marker and clone confirmation	78-79
Figure 10	Targeted deletion of <i>MoSUMO</i> gene in <i>M. oryzae</i> using splitmarker approach	80-81
Figure 11	Reverse Transcriptase-PCR of wild type and $\Delta Mosumo$ mutant	82
Figure 12	Complementation <i>MoSUMO</i> gene in <i>M. oryzae</i>	83
Figure 13	Growth assay of ΔMosumo mutant and complemented strain (ΔMosumo/MoSUMO)	84
Figure 14	Phenotype of wild type, $\Delta Mosumo$ mutant and complemented strains	85-86
Figure 15	Nuclear segregation in Wild type and $\Delta Mosumo$ mutant	87

Figure 16	Chitin distribution in Wild type and ΔMosumo mutant	89
Figure 17	Expression of GST and MoSUMO proteins in <i>E. coli</i>	90-91
Figure 18	Western blot analysis	93
Figure 19	Indirect immunolocalization of MoSUMO	96
Figure 20	Southern blot of GFP::MoSUMO transformants	97
Figure 21	Phenotype of GFP::MoSUMO transformant	99
Figure 22	Subcellular localization of MoSUMO in developmental stages of appressoria	100
Figure 23	Localization of MoSUMO of <i>M. oryzae</i> in host tissue	101
Figure 24	Colocalization of MoSUMO, at nuclear and septal region of hyphae	102
Figure 25	Colocalization of MoSUMO and actin protein	103
Figure 26	Two dimensional gel electrophoresis of Wild type and $\Delta Mosumo$ mutant	109
Figure 27	Scatter plot analysis of 2DGE of WT versus $\Delta Mosumo$ mutant	110
Figure 28	Chromatogram of identified protein spots using MALDI-	111-
	TOF/TOF and detail of peptide mass fingerprinting	112
Figure 29	Western blot analysis of enriched sumoylated proteins in <i>M.</i> oryzae	114
Figure 30	Schematic representation of role of sumoylation in pathogenicity of rice blast fungus	133