RiceNucleolin genes, *OsNUC* genes are the members of a small gene family in rice, consisting of two genes, *OsNUC1* and *OsNUC2*, which are located on chromosome 4 and 8 respectively. *OsNUC1*encodes the protein with three conserved domains of Nucleolins found in other species, which are the acidic glycine rich domain with nuclear localization signal (NLS) at amino-terminal, two RNA recognition motifs (RRM) at the central domain, and glycine-and arginine-rich (GAR) domain at carboxyl terminal. The cDNA clones encoding the polypeptide consisting of all three domains and the one encoding the polypeptide consisting of the central and carboxyl-terminal domains exist in rice genome database. The localization experiment using GFP-Nucleolin fusion protein, performed in the onion epidermal peel, showing that GFP-three-domain Nucleolin1 fusion protein was localized in nucleus only, while the GFP-two-domain Nucleolin1 fusion protein, which was the fusion protein between GFP and central and carboxyl terminal domains of Nuclelin1, was localized in both nucleus and cytoplasm. This suggested that the two-domain Nucleolin1 could be transported to the nucleus without NLS at N-terminal. The *OsNUC1* transcripts were found in leaf, root, seed, and flower tissues. The highest expression level was found in flowers and roots. Based on quantitative real-time PCR, salt stress can induce *OsNUC1* gene expression up to 9 days after treatment. The salt resistant lines, LPT123-TC171 and FL530-IL showed the higher *OsNUC1* gene expression, when compared to their salt-susceptible isogenic lines, LPT123, and KDML105, respectively. This suggests that *OsNUC1* may function as a salt resistant gene in rice. The cDNA clone encoding the central and carboxyl terminal domains was over-expressed in transgenic Arabidopsis, and three independent transgenic lines with the different gene expression levels were used to investigate the effect of *OsNUC1* gene expression. It was shown that *OsNUC1* gene expression can enhance root growth, increase leaf number in both normal and salt-stress conditions. These data confirm the hypothesis that *OsNUC1* is involved in salt resistant mechanism in plants. Moreover, it was found that *OsNUC1* could increase at least two salt resistant genes, *AtSOS1* and *AtP5CS1*, which supports the role of *OsNUC1* in salt resistant function. Exogenous ABA can induce *OsNUC1* gene expression in rice, which is consistent with the existence of ABRE *cis*-element in the promoter region. However, during salt stress, the application of abamineSG, ABA synthesis inhibitor, did not affect *OsNUC1* expression, suggesting that ABA may not required for *OsNUC1* gene expression during salt stress.