



## Paenibacillus lentimorbus Mediated Autophagy Protect Tomato Against Biotic Stress

Ritu Dixit

CSIR-National Botanical Research Institute, Lucknow, 226 001, India

**ABSTRACT** : There are several strategies to control plant fungal disease, however, changing global climate develop resistant of their sclerotia. Therefore, an urgent need for an eco-friendly approach has given rise of microbes to control phytopathogen. Tomato an essential agriculture crop affected by many stresses, several mechanisms use by plants to protect themselves that include reactive oxygen species (ROS), induction of pathogenesis-related proteins and cell death. In eukaryotes, Autophagy is a conserved pathway for the degradation of cytoplasmic components. This process plays a critical role in the adaptation of plants to different stresses such as starvation, oxidative stress, drought, salt, and pathogen invasion. In our study we explore the role of PGPR [(*Paenibacillus lentimorbus* (B-30488))] in the induction of plant autophagy and their role in plant defense during stress. We also evaluated the autophagy response of host infected with *S. rolfsii* treated with and without B-30488 along with autophagy inhibitor (chloroquine). Detached leaf assay was performed which resulted in induction of autophagy response in infected samples treated with B-30488. Results of ROS accumulation, fluorescence, confocal and transmission electron microscopy and gene expression analysis by using real time PCR were further evident the induction of autophagy response using B-30488 as a biocontrol agent. This study suggested the role of B30488 in enhancing the disease resistance in tomato by inducing the autophagy response



**Biography:** Ritu has completed her PhD from Lucknow University and postdoctoral studies from Palacky University Czech Republic, Europe. She has published papers in reputed journals.

**Publications:** 1. Essential Oils: Potential Application in Disease Management  
2. *Paenibacillus lentimorbus* induces autophagy for protecting tomato from *Sclerotium rolfsii* infection  
3. Supplementary Material  
4. Ageratum enation virus Infection Induces Programmed Cell Death and Alters Metabolite Biosynthesis in *Papaver somniferum*  
5. Southern blight disease of tomato control by 1-aminocyclopropane-1-carboxylate (ACC) deaminase producing *Paenibacillus lentimorbus* B-30488

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