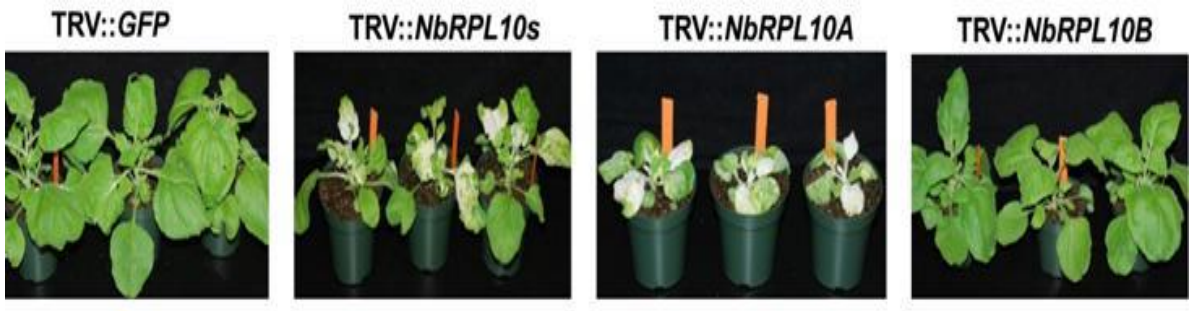
Ribosomal protein QM/RPL10 positively regulates defense and protein translation mechanisms during non-host disease resistance

Dr. Ramu S. Vemanna, Assistant Professor at Regional Centre for Biotechnology (RCB), Faridabad has reported that the Ribosomal protein QM/RPL10 and its interacting proteins RNA recognition motif (RRM), RPL30, RPL23, and RPS30 have extra-ribosomal functions and play a role in non-host disease resistance. The *RPL10*-silenced *Nicotiana benthamiana* plants showed compromised disease resistance against non-host pathogen *Pseudomonas syringae*pv. tomato T1. Ribosomes are known to play an integral part in plant growth, development and defense responses.



The RNA-sequencing analysis revealed that many genes involved in defense and protein translation mechanisms were differentially affected due to silencing of *NbRPL10*. Arabidopsis *AtRPL10* RNAi and *rpl10* mutant lines showed compromised non-host disease resistance to *P. syringae*pv. tomato T1 and *P. syringae*pv. tabaci. Overexpression of *AtRPL10A* in Arabidopsis resulted in improved disease resistance against host pathogen *P. syringae*pv. tomato (DC3000). The results suggest that QM/RPL10 positively regulates the defense and translation-associated genes during non-host pathogen infection.

Dr. Vemanna, has published a research article with his collaborators on "*Ribosomal protein QM/RPL10 positively regulates defence and protein translation mechanisms during non-host disease resistance*" in journal *Molecular Plant Pathology*.

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