



Appa Rao Podile

Appa Rao Podile is Professor of Plant Sciences at School of Life Sciences, Department of Plant Sciences, University of Hyderabad, India. His research group works on a variety of aspects of plant microbe interactions with special focus on approaches induce immunity in plants. In the process, his group has made contributions in areas such as bacterial chitinases, discovery, kinetics, structure-function studies, and enzyme engineering. He is an academic partner in the European Union (FP7) funded project referred to as “Nano3Bio” (BioEngineering of BioInspired BioPolymers) along with European partners since October 2013. In addition, his lab is supported by the Department of Biotechnology, Government of India with extramural grants.

Recent Publications with Chitin and Chitinases:

- Madhuprakash, J., N.E. Gaddari, Moerschbacher, B.M. and **A. R. Podile** (2015) Catalytic efficiency of chitinase D on insoluble chitinous substrates was improved by fusing auxiliary domains. *PLoS One* 10: e0116823, DOI: 10.1371/journal.pone.0116823
- Madhuprakash, J., Karunakar, T., Bhavana, K., Lalita, G., and **A.R. Podile** (2014). Mutagenesis and molecular dynamics simulations revealed the chitooligosaccharide entry and exit points for chitinase D from *Serratia proteamaculans*. *Biochimica et Biophysica Acta General Subjects* 1840: 2685–2694
- Das, S.N., Madhuprakash, J., Sarma, P.V.S.R.N., Purushotham P., Suma, K., Kaur, M., Rambabu, S., N.E. Gaddari, Moerschbacher, B.M. and **A. R. Podile** (2013) Chitooligosaccharides for crop protection – the transglycosylation route for synthesis. *Crit. Rev. Biotechnol.* (DOI: 10.3109/07388551.2013.798255)
- Madhuprakash, J., A. Singh, S. Kumar, M. Sinha, P. Kaur, S. Sharma, **A. R. Podile** and T. P. Singh (2013) Structure of chitinase D from *Serratia proteamaculans* revealed the presence of a novel platform for hydrolysis and transglycosylation of chitin oligomers. *Int. J. Biochem. Mol. Biol.* 4:166-178
- Suma, K., Sravani, A. and **A. R. Podile** (2013) Efficient conversion of chitooligosaccharides into N-acetylglucosamine by β -N-acetyl glucosaminidase of *Stenotrophomonas maltophilia*. *FEMS Letts.* 348: 19–25
- Manjeet, K., Purushotham, P., Neeraja, Ch., and **A.R. Podile** (2013) Bacterial chitin binding proteins show differential substrate binding and synergy with chitinases. *Microbiol. Res.* 168: 461-468
- Suma, K and **A.R. Podile** (2013) Chitinase A from *Stenotrophomonas maltophilia* shows transglycosylation and antifungal activities. *Biores. Technol.* 133: 213-220