

Curriculum Vitae

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Scientist

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Summary

Dr. Sudhir P. Singh (Singh SP) is currently Scientist at the Center of Innovative and Applied Bioprocessing (CIAB), Mohali, India. He has been working in the area of molecular biology and biotechnology for more than a decade. Currently, his main focus of research is gene mining and biocatalyst engineering for development of approaches for transformation of agro-industrial residues and under- or un-utilized side-stream biomass into value-added bioproducts. His group has improved thermal stability of D-allulose 3-epimerase enzyme by employing gene fusion and immobilization strategies. Further, novel genes encoding D-allulose 3-epimerase, amylosucrase, xylanase etc. enzymes have been discovered from the extreme habitats. His research group has developed bioprocesses for biosynthesis of high-value functional biomolecules from the low-value caloric sugars present in fruit and vegetable residues, cane molasses, liquid whey, and table sugar.

Furthermore, he has developed novel stringently regulated gene expression systems for inducing male sterility and fertility restoration in plants during his doctoral study. He revealed tissue-specific distribution pattern of mineral nutrients in wheat grains and its probable impacts on mineral bioavailability. He provided the first molecular insights into fruit and seed development in custard apple and litchi by analyzing *de novo* transcriptome of developing fruits and ovules of contrasting genotypes. His *de novo* transcriptomic study provided the first molecular details of the specialized metabolic pathways in rose-scented geranium.

Dr. Singh has over 50 scientific publications and 11 patents (10 filed, 01 granted) to his credit. Out of these patents, three have been licenced to an industry. He has been conferred International Bioprocessing Association-Young Scientist Award (2017), School of Biosciences-Madurai Kamraj University (SBS-MKU) Genomics Award (2017), and Professor Hira Lal Chakravarty Award, Indian Science Congress Association (A professional body of Deptt. of Science and Technology, Govt. of India) (2018).