

Science Setu Webinars by NIPGR
“LIPID SIGNALING FOR STRESS TOLERANCE IN PLANTS”

Press- Note

Date: 25-08-2021, Wednesday

Resource person: Dr. Amarjeet Singh, Scientist III, NIPGR

The Department of Biotechnology, Government of India, has planned “Science Setu” as a virtual platform to connect research Institutes with undergraduate students. Under this, our college has been assigned to National Institute of Plant Genome Research (NIPGR), New Delhi. NIPGR is an autonomous institution aided by the Department of Biotechnology. Research at NIPGR focuses on functional, structural, evolutionary and applied genomics of plants, including crop plants. Through the Science Setu program, our students and faculty virtually connect with NIPGR, New Delhi and got to know about the multifarious kinds of plant based research. It is a unique opportunity for science students at undergraduate level to get an exposure to high-level research.

Dr. Pinky Agarwal, Scientist, NIPGR gave welcome note on this event. **Resource person: Dr. Amarjeet Singh, Scientist III, NIPGR** started his lecture with brief overview on environmental stresses and threat they pose to growth and productivity of plants. He also gave an outline of signal transduction and its role as an adaptive mechanism against these environmental stresses. He then discussed about lipid signaling in plants as how lipids respond to stress and act as mitigators to reduce the intensity of stressors. He explained the generation of lipid signaling molecules and classification of plant Phospholipases which play a crucial role in lipid signaling. He further elaborated phospholipid mediated stress signaling under drought stress by giving reference to their review articles. Their roles were also discussed under nitrogen deficiency and salt stress. He inspired all the participants for research by explaining his ongoing research on plant phospholipases. In total, 41 participants attended the webinar. Dr. Pinky Agarwal, Scientist IV, NIPGR attended the questions of the participants and gave vote of thanks. It was a knowledgeable and exciting experience for the participants.

Photos - Science setu.jpg

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Azadi ka Amrit Mahotsav
Commemorating 75 years of Independence at NIPGR


Science Setu Webinars
Twelfth webinar
on 25th August, 2021, Wednesday
at 3:00 p.m.

"Lipid signaling for stress tolerance in plants"

by
Dr. Amarjeet Singh
Scientist III, NIPGR

Moderated by
Dr. Pinky Agarwal
Scientist IV, NIPGR

Link for the webinar:
<https://nimg.webex.com/nimg/ansitec/j.php?MTQ=e-1991657e0-25-467b580c75-e-098177a>



Amarjeet Singh

Webex

Pinky Agarwal

Amarjeet Singh

NIPGR (host)

Aashish Ranjan

Aniruddho Das

Ayushi

Amarjeet Singh is sharing...

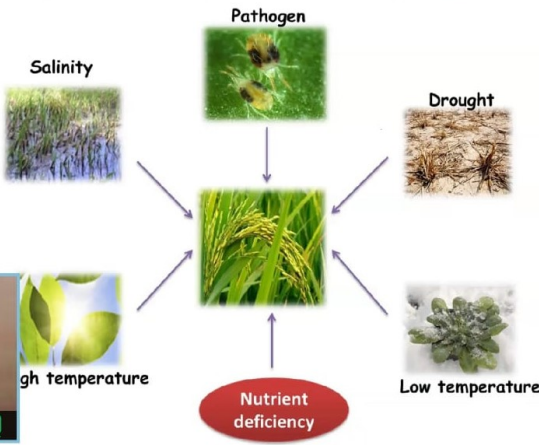
Lipid signaling for stress tolerance in plants

By:
Dr. Amarjeet Singh
Scientist, NIPGR



PA
Pinky Agarwal

Environmental stresses pose serious threat for normal growth and productivity of plants



Salinity

Pathogen

Drought

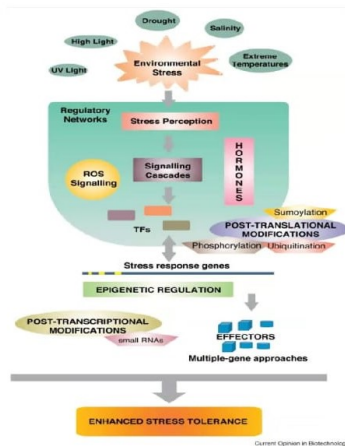
High temperature

Nutrient deficiency

Low temperature

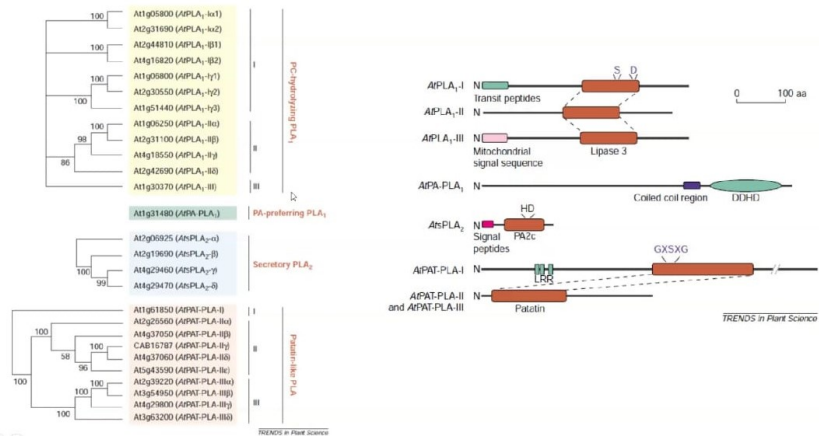
Amarjeet Singh

Signal transduction : an adaptive mechanism

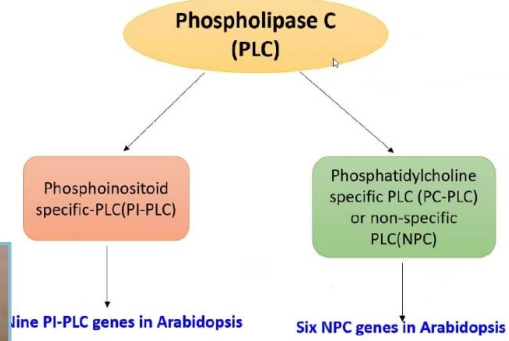


Amarjeet Singh

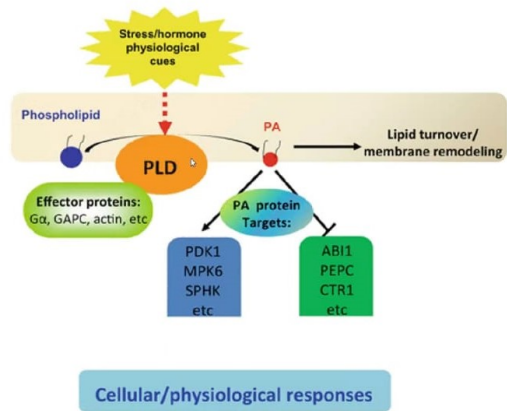
Phospholipase A (PLA) in plants



Phospholipase C (PLC) in plants



PLD mediated lipid signaling in plants

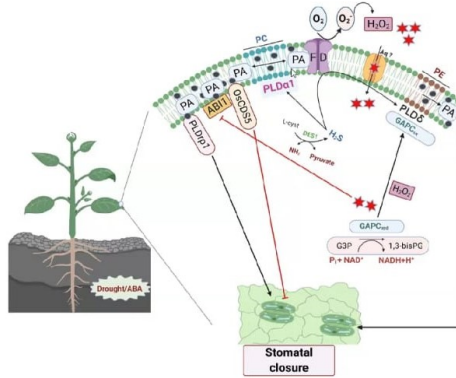


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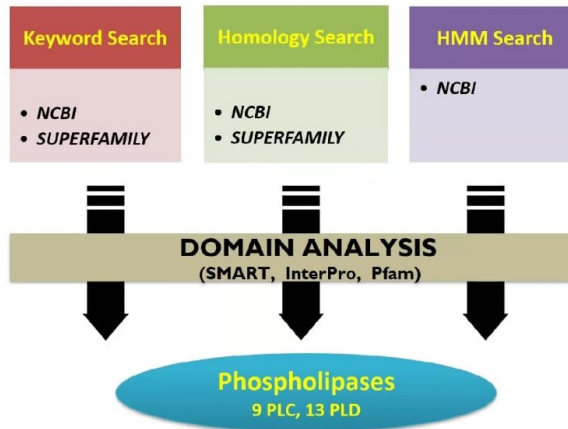
Plant phospholipase D: novel structure, regulatory mechanism, and multifaceted functions with biotechnological application

Deepika Deepika and Amarjeet Singh
National Institute of Plant Genome Research, New Delhi, India

PLDs in drought/hyperosmotic stress signaling and response



Exploration of PLCs and PLDs in legume crop Chickpea



Gene

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Research paper

Genomic and expression analysis indicate the involvement of phospholipase C family in abiotic stress signaling in chickpea (*Cicer arietinum*)

Sushma Sagar, Dipul Kumar Biswas, Amarjeet Singh*

National Institute of Plant Genome Research, New Delhi 110067, India

- Chickpea PLC family is comprised of a total of 9 members, which are divided into six members of PI-PLC (CaPLC1-6) and three NPC3s (CaNPC1-3)
- CaPLCs made dicot specific clades with *Arabidopsis* PLCs, and separated from monocots.

Acknowledgement

Speaking: Amarjeet Singh

Webex

Pinky Agarwal

Amarjeet Singh

NIPGR (host)

Aashish Ranjan

Aditi Panwar

Alok Sinha