

Curriculum Vitae

Personal information

First name / Surname	Sikander Pal		
Address(es)	<i>Present address</i> : H. No. 9 Ram Nagar Colony, Ram Enclave, Opp Vohra Mills, Amritsar 143001, India		
Telephone		+00919018997749 (in India)	
Mobile	+00919018997749		
E-mail	Sikanderchowdhary@gmail.com		
Nationality	Indian		
Date of birth	27/04/1981		
Gender	Male		

Personal statement and statement of intent	<p>I hold a Masters in Botany with distinction majoring in plant physiology and biochemistry. During my PhD training, the expertise I acquired was in the area of molecular and physiological aspects of the crosstalk between plant hormones (brassinosteroids, auxins, abscisic acid) and polyamines under heavy metal stress tolerance. In 2010 I was awarded a PhD, majoring in plant stress physiology. My PhD training provided me with external insights into the complexity of the crosstalks, which could be involved in the coordination of development according to plant hormones/nutrient (essential/non essential) cues. For my post-doctoral work (<i>16 months</i>) at Zhejiang University, China, I continued studying the physiological and molecular crosstalk of brassinosteroids with polyamines under heavy metal stress. The findings were published in Journal of Experimental Botany, PLoS ONE, conjointly with an invited review article entitled Benefits of</p>
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Brassinosteroids Crosstalk in Trends in Plant Science [a leading plant journal]. Collectively, based on my work and progress in literature I have become convinced that such complexity of crosstalk between molecules in plants could only be solved using a combination of genomics, systems and math approaches. Noteworthy, my research work suggests strongly an interaction between heavy metals with each other and also with others ions, but I never had the opportunity to investigate and develop more of these observations. My research experience led to write and contribute so far 14 original papers and will probably provide 2 other research papers currently in preparation.

Recently (*June 2012-June, 2013*), I finished my project of **Syngenta** Ltd (a leading company in plant breeding and biotechnology), **as a project leader**, to elucidate the role of paclobutrazol on drought tolerance and nutrient deficiency of tomato at Jacob Blaustein Institutes for Desert Research, Ben Gurion University, Israel. I was leading a team and coordinating the project that investigate the morphological, physiological and molecular impacts of paclobutrazol and actara on the sweet corn and tomato in terms of drought tolerance.

All this experience enabled me to develop and strengthen skills. I am a team player, organized, and objective/result oriented person. I have well-developed problem solving and project management skills. I am a fully autonomous person both at the conceptual and methodological framework. I have developed verbal, written and interpersonal communication skills, which are essential criteria for a scientist to present and publish research findings.

My short-term goal is to gain experience and knowledge to become well-prepared and comfortable with different highly competitive research environments. My main objective now is seeking a permanent position. This Mobilty program would give me the best opportunity to work as a researcher, ii) develop a new exciting project that, I think, will not only be valuable for plant biologists but also for the biologist

	<p>community at large. I aim to be recognized internationally as an outstanding scientist who contributes by generating scientific knowledge and facilitate its transformation in a “product” for improved future human society. My immediate research plans include elucidation of the crosstalk between an essential macro- and micronutrient (essential heavy metal), namely phosphate and zinc, crosstalk in plants, is not only of great scientific interest, but also crucial for sustainable agriculture worldwide. I aim to facilitate the transfer of this knowledge to an agronomic or biotechnological applications, such as producing crop plants that are able to grow on soil with low Pi and Zn concentration. Ultimately, my long term goal is to develop a research group of my own and continue to undertake research with high scientific impact, evidenced by the continued publication in high impact sources and uptake of outputs by industry to inform practice for greater global food security.</p>
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Education and training

Specify information regarding PhD and MSc

Location and dates	Department of Botanical and Environmental Sciences, Guru Nanak Dev University, India, <i>from</i> 21/09/2004 to 10/05/2010.
Title of qualification awarded	PhD in Plant Physiology
Principal subjects/occupational skills covered	Heavy Metal Stress Physiology and metal stress amelioration in Plants. My Ph.D. research work was to elucidate the “Role of brassinosteroids (a class of plant hormones) crosstalk with auxins, abscisic acid and polyamines under heavy metal stress (Cu and Cr) tolerance in radish”. The technical skills covered include qRT-PCR, HPLC, LC-MS and confocal microscopy
Name of Institute	Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar 143001, India
Location and dates	Department of Botanical and Environmental Sciences, Guru Nanak Dev University, India, <i>from</i> 15/04/2002 to 20/07/2004
Title of qualification awarded	MSc

Principal subjects/occupational skills covered	Plant biochemistry and Plant Physiology
Name of Institute	Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar 143001, India

Work experience

Location and dates	Jacob Balustein Institutes of Desert Research, Ben Gurion University, Israel (<i>June 20, 2012 –June 29, 2013</i>).
Occupation or position held	Post doctor
Main activities and responsibilities	Research, elucidating the role of paclobutrazol and actara on drought tolerance of tomato and sweet corn at morphological, physiological and molecular level using state of the art techniques and methods.
Name of employer	Jacob Balustein Institutes of Desert Research, Ben Gurion University, Israel
Location and dates	College of Agriculture and Biotechnology, Zhejiang University, Hangzhou, China, <i>from 15/2/2011 to 15/06/2012</i> .
Occupation or position held	Post doctor
Main activities and responsibilities	Worked on the crosstalk of copper (Cu) with brassinosteroids and polyamines using physiological, mutant analysis and molecular approaches. Transgenic approaches were used to elucidate the crosstalk points between Cu and brassinosteroids and polyamines at the receptor and protein levels. The qRT-PCR, analytical HPLC, LC-MS techniques were used to determine the metabolic changes in radish plants under Cu-stress.
Name of employer	College of Agriculture and Biotechnology, Zhejiang University, Hangzhou, China
Languages	

Mother tongue(s)	<i>if relevant, add other mother tongues</i>				
Other language(s)	Understanding		Speaking		Writing
<i>European level (*)</i>	Listening	Reading	Spoken interaction	Spoken production	
English	Excellent	Excellent	Excellent	Excellent	Excellent

Academic Record

Add as many lines as needed, delete fields which are not relevant to your profile

Publications	<p>(*<i>Corresponding author</i>)</p> <ol style="list-style-type: none"> <u>Sikander Pal Choudhary</u>, Jing-Quan Yu, Kazuko Yamaguchi-Shinozaki, Kazuo Shinozaki and Lam-Son Phan Tran. (2012). Benefits of brassinosteroids crosstalk. <i>Trends in Plant Science</i>, DOI: 10.1016/j.tplants.2012.05.012 *<u>Sikander Pal Choudhary</u>, Renu Bhardwaj, Lam-Son Phan Tran and Jing Qyan Yu (2012). Interactions of brassinosteroids and polyamines enhance copper stress tolerance in <i>Raphanus sativus</i> L. <i>Journal of Experimental Botany</i>, Vol. 63, No. 15, pp. 5659–5675. Golam Jalal Ahammed, <u>Sikander Pal Choudhary</u>, Shuangchen Chen, Xiaojian Xia, Kai Shi, Yanhong Zhou and Jingquan Yu (2012) Role of brassinosteroids in alleviation of phenanthrene–cadmium co-contamination-induced photosynthetic inhibition and oxidative stress in tomato. <i>Journal of Experimental Botany</i>, doi:10.1093/jxb/ers323 *<u>Sikander Pal Choudhary</u>, Mukesh Kanwar, Renu Bhardwaj, Jing Qyan Yu, Lam-Son Phan Tran. (2012). Zooming on Polyamine-Brassinosteroid Impacts in Cr (VI) Stress Alleviation: Focus on Phytohormonal and Physiological Strategies in <i>Raphanus sativus</i> L. <i>PLoS ONE</i> http://dx.plos.org/10.1371/journal.pone.0033210
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5. Mukesh Kumar Kanwar, Renu Bhardwaj, Priya Arora, **Sikander Pal Choudhary**, Priyanka Sharma and Subodh Kumar. (2012). Plant steroid hormones produced under Ni stress are involved in the regulation of metal uptake and oxidative stress in *Brassica juncea* L. *Chemosphere*, 86 (1), 41-49.
6. Shummu Slathia, Anil Sharma and ***Sikander Pal Choudhary** (2012) Influence of exogenously applied epibrassinolide and putrescine on protein content, antioxidant enzymes and lipid peroxidation in *Lycopersicon esculentum* under salinity stress. *American Journal of Plant Sciences* 3: 714-720
7. **Sikander Pal Choudhary**, Lam-Son Phan Tran. (2011). Phytosterols: Perspectives in Human Nutrition and Clinical Therapy. *Current Medicinal Chemistry*, 18 (29), 4557-4567.
8. ***Sikander Pal Choudhary**, Mukesh Kanwar, Renu Bhardwaj, B.D. Gupta and R.K. Gupta. (2011). Epibrassinolide ameliorates Cr (VI) stress via influencing the levels of indole-3-acetic acid, abscisic acid, polyamines and antioxidant system of radish seedlings. *Chemosphere*, 84 (5), 592–600.
9. **Sikander Pal Choudhary**, Renu Bhardwaj, B.D. Gupta, Prabhu Dutt, and Mukesh Kanwar (2011). Changes induced by Cu²⁺ and Cr⁶⁺ metal stress in polyamines, auxins, abscisic acid titers and antioxidative enzymes activities of radish seedlings. *Brazilian Journal of Plant Physiology*, 22 (4): 270-276.
10. ***Sikander Pal Choudhary**, Renu Bhardwaj, B.D. Gupta, Prabhu Dutt, R.K. Gupta, Stefania Biondi, and Mukesh Kanwar (2010) Epibrassinolide induces changes in indole-3-acetic acid, abscisic acid, polyamines and enhances antioxidant potential of radish seedlings under Cu metal stress. *Physiologia Plantarum*, 140 (3), 280-296.

11. ***Sikander Pal Choudhary**, Renu Bhardwaj, B. D. Gupta, Prabhu Dutt, R. K. Gupta, Mukesh Kanwar and Stefania Biondi (2010) Enhancing effects of 24-epibrassinolide and Putrescine on the antioxidant capacity and free radical scavenging activity of *Raphanus sativus* seedlings under Cu metal stress. *Acta Physiologiae Plantarum*, 33 (4), 1319-1333.
12. **Sikander Pal Choudhary**, Renu Bhardwaj, B.D. Gupta, Prabhu Dutt, and Mukesh Kanwar (2009) Epibrassinolide regulated synthesis of polyamines and auxins in *Raphanus sativus* L. seedlings under Cu metal stress. *Brazilian Journal of Plant Physiology*, 21 (1), 25-32.
13. **Sikander Pal Choudhary**, Renu Bhardwaj, B.D. Gupta, Prabhu Dutt and Priya Arora (2009). Effect of 24-Epibrassinolide on Polyamine Titters, Antioxidative Enzyme Activities, and Seedling Growth of *Raphanus sativus* L. under Copper Stress. *Plant Stress* 1: 7-12.
14. Mukesh Kumar Kanwar, Renu Bhardwaj, Priya Arora, **Sikander Pal Choudhary**, Priyanka Sharma and Subodh Kumar. (2012). Nickel-induced Synthesis of Castasterone and 28-Homocasterone in *Brassica juncea* L. *Terrestrial and Aquatic Environmental Toxicology* 6 (1)

Papers submitted:

1. Avital Yosef Friedjung, **Sikander Pal Choudhary**, Nativ Dudai, Shimon Rachmilevitch (2013) Physiological conjunction of allelochemicals and desert plants. *PLoS ONE*

Ready for submission:

1. **Sikander Pal Choudhary**, Jiangan Zhao, Albert berthuan sky, Asif Khan, Simon Barak, Aaron Fait, Shimon Rachmilevitch (2013) Paclobutrazol manoeuvres morphological, physiological, metabolic and molecular responses to improve drought tolerance of *Solanum lycopersicon*. *Plant Physiology*

	<p>2. <u>Sikander Pal Choudhary</u>, Hasan Volkan Oral, Asif Khan, Lam-Son Phan Tran (2013) Biotechnology advancements in Forestry. <i>Biotechnology Advances</i></p> <p><i>Under prepration</i></p> <p>3. <u>Sikander Pal Choudhary</u>, Lam-Son Phan Tran (2013) Intercations of plant hormones under abiotic stress. <i>PLoS Biology</i></p> <p>4. <u>Sikander Pal Choudhary</u>, Jiangan Zhao, Albert berthuansky, Aaron Fait, Shimon Rachmilevitch (2013) Paclobutrazol induced metabolomic shift imparts drought resistance in alpha variety of tomato plants. <i>Jouranl of Experimental Botany</i></p>
Presentations as invited speaker	Delivered lecture on “Zooming on Polyamine-Brassinosteroid interactions in heavy metal stress alleviation : Focus on phytohormonal and physiological strategies in <i>Raphanus sativus</i> L.” at International Congress: Biogenic Amines-Biochemical, Physiological and Clinical Perspectives, Trento (September 21-25, 2011), Italy.
Books or books chapter author	Co-editor: Co-editing a book titled A Window to Signal Transduction of Plant hormones from <u>SPRINGER HOUSE</u> scheduled to be published in mid 2014.
Graduate teaching as lecturer or training coordinator	Worked as a Lecturer at Department of Botany, University of Jammu since April, 2006 to Feb, 2011.
Awards and prizes if any	<p>1. Awarded prestigious European Union-AgreenSkills incoming Postdoctoral Fellowship (Jan, 2014-Jan, 2016) at INRA, Montpellier France to be commenced from January, 2014.</p> <p>2. Awarded PBC Indo-China Postdoctoral Fellowship to pursue research at Jacob Blaustein Institutes of Desert Research, Ben Gurion University, Israel (Oct 2012 to Oct 2015).</p> <p>3. Awarded Blaustein Postdoctoral fellowship at Ben Gurion University, Israel (July 2012 to July 2013).</p> <p>4. Awarded postdoctoral fellowship (August, 2010 to June, 2012) under</p>

	<p>Talent recruitment program at Zhejiang University, Hangzhou China.</p> <p>5. Awarded University Grants Commission–National Eligibility Test, <i>Junior Research Fellowship</i> from the Council of Scientific and Industrial Research (CSIR) of India to pursue Ph.D. research in Botany [May 2004-April 2006] at Guru Nanak Dev University under the supervision of Prof. Renu Bhardwaj.</p>
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Collaboration and Networking

Partnerships or experience with industry	<ol style="list-style-type: none"> 1. Worked as a Postdoctoral at Jacob Blaustein Institutes of Desert Research, Ben Gurion University, Israel (June 20th 2012- June 29th 2013) 2. Worked as a Postdoctoral at Zhejiang University, Hangzhou China (15/2/2011 to 15/06/2012)
University or post-graduate program leader	Taught postgraduate (MSc) courses (April 2006 to Feb, 2011) such as plant physiology, plant resource utilization and conservation and Plant Ecology at University of Jammu, India.
Graduate teaching as a lecturer or training coordinator	Supervised Master in Philosophy (M.Phil) thesis (2010-2011) entitled Studies on the exogenous application of 24-Epibrassinolide and Putrescine in <i>Lycopersicon esculentum</i> L. under salinity stress in 2011 at Department of Botany, University of Jammu, India. The supervision of M.Phil student prove my successful postgraduate supervision.
Membership of professional bodies and committees	Member of American Society of Plant Biologist (ASPB)
Proven ability to source external funding for research	<ol style="list-style-type: none"> 1. Successful funding of European-Union Project entitled “Investigation of the molecular, physiological and genetic bases of the phosphate and zinc homeostasis crosstalk in Arabidopsis” for a period of two years (Jan 2014 to Jan, 2016). 2. Awarded funding for a research project “studies on the role of paclobutrazol in the drought tolerance of tomato plants” from Israeli Government PBC fellowship and Blaustein Postdoctoral Fellowship of Ben-Gurion University, Israel (June, 2012 to June, 2015).

	<p>3. Awarded funding for a research project “Physiological crosstalk of brassinosteroids and polyamines in radish under copper and chromium stress” from Zhejiang University, China (Feb 2011 to June, 2012).</p>
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Research management, Technology transfer and Communication

Team management	Worked as a junior leader on a Syngenta Project on <i>Zea mays</i> under drought stress tolerance at Ben Gurion University (<i>from 20/6/2012 - 29/6/2013</i>)
Technological platform management	Managing LC-MS and qRT-PCR and other physiological analysis technical platform.
Willingness to in community service	During my postdoctoral tenure in China and Israel, I worked in collaboration with other scientist to acheiev the set goals. All these experiences show my commitment to community service.

<p>Other experience and skills relevant to the application</p>	<p><u><i>CURRENT RESEARCH</i></u></p> <p>Abiotic stress (drought, nutrient deficiency, selected molecules) signalling crosstalk in tomato and sweet corn combing state-of-the art tools via integrative approaches.</p> <p><u><i>INTENDED RESEARCH</i></u></p> <ol style="list-style-type: none"> 1. To comprehensively investigate the crosstalk between Pi deficiency and heavy metal Zn excess (++) in <i>Arabidopsis thaliana</i>. 2. Application of crosstalk in agricultural improvement and solving problems of grave concerns such as global warming, depletion of renewable resources and global food security. <p><u><i>Regular reviewer of scientific journals</i></u></p> <p>New Phytologist, PLoS ONE, Chemosphere, Journal of Hazardous Materials, Scientia Horticulture, Journal of Environmental Protection Science, Ecotoxicology and Environmental Safety, Environmental</p>
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	<p>Science and Pollution Research, African Journal of Biotechnology.</p> <p><i>Co-editor of Books under preparation</i></p> <p>Springer link and Bentham Science Publishers</p>
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Dr. Sikander Pal