SAURABH CHANDRA SAXENA (Ph.D)

Assistant Professor
Department of Biochemistry
Central University of Haryana
Jant-Pali, Dist.-Mahendergarh,
Haryana 123031
(Mob) +91-9873547937
E-mail:saurabhbiochem@gmail.com, saurabhcs@cuh.ac.in

CURRENT POSITION

Assistant Professor in Department of Biochemistry, **Central University of Haryana** (since February, 2020).

EDUCATIONAL QUALIFICATION

- **Ph. D.** (Biochemistry, 2004-2009) with CGPA (8.1 out of 10); **G. B. Pant University of Agriculture and Technology, Pantnagar** (India).
- **M.Sc.** (Major: Biochemistry, Minor: Biotechnology, 2002-2004) with CGPA (7.78 out of 10); **G. B. Pant University of Agriculture and Technology, Pantnagar** (India).
- **B.Sc. (Hons.)** (Botany [Main], Zoology, Chemistry, 1999-2002) with 74.0%; **Aligarh Muslim University**, Aligarh (India).
- **Intermediate** (1998) with 68.6 %, Subject: Physics, Chemistry, Biology, English, Hindi; **UP Board**, India.
- **High School** (1996) with 70.3 %, Subject: Science, Math, Biology, Social science, English, Hindi; **UP Board**, India.

ACADEMIC ACCOMPLISHMENTS/ AWARDS AND FELLOWSHIPS

- Awarded **Start Up Research Grant (Young Scientists), 2015** on 'Elucidating the Functional and Regulatory Aspects of Inositol Monophosphatase like Proteins

(IMPL1 and IMPL2) from drought tolerant legume Chickpea (*Cicer arietinum*)' by Science and Engineering Research Board (SERB-DST), New Delhi

- Qualified for **Junior Research Fellowship, 2006** conducted by Council of Scientific & Industrial Research **(C.S.I.R.)**, New Delhi, INDIA**.**
- Qualified for **Junior Research Fellowship, 2005** conducted by Indian council of Medical Research (**I.C.M.R.**), New Delhi, INDIA.
- Qualified for Graduate Aptitude Test in Engineering (**G.A.T.E.) 2005**
- Qualified for **C.S.I.R.- U.G.C. National Eligibility Test for Lectureship, 2003**
- Secured **First** position in B.Sc. (Botany Hons.) Examination.

RESEARCH / TEACHING EXPERIENCE

Current Research Area- "Functional Genomics of Abiotic Stress Tolerance"

RESEARCH AND TEACHING EXPERIENCE

Delhi Technological University (Formerly Delhi college of Engg.)
New Delhi, India July 2014-Feb 2020

- Assistant Professor in Department of Biotechnology

National Institute of Plant Genome and Research (NIPGR) Mar 2010-July 2014
New Delhi, India

- **Postdoc Research**
  Project: "Isolation, Cloning and Characterization of Inositol biosynthetic gene, inositol monophosphatase (IMPase) from drought tolerant legume plants (*Cicer arietinum*)"
  - Result: Biochemical and Functional characterization of IMP was done, IMP from chickpea plant was found to be broad substrate specific. Arabidopsis seedlings overexpressing IMP was tolerant to be variety of abiotic stress as evident from physiological and biochemical parameters.

G. B. Pant University of Agriculture and Technology July2004-Dec 2009
Pantnagar, India

- **Ph.D. Research**
  Project:"Engineering Antioxidant Defense Mechanism to Combat Salinity Stress in *Brassica juncea*"
  - Results: *apx1* (cytosolic Ascorbate peroxidase) gene was overexpressed in Brassica juncea through Agrobacterium mediated transformation. Under salinity stress, the transgenic plants performed better than the wild type plants; as revealed through increased proline content, lower chlorophyll a/b ratio, higher activities of Ascorbate peroxidase, Guaiacol peroxidase & Total peroxidase along with lower H_2O_2 and MDA levels.

- **M.Sc. Dissertation** Jan 2004-July 2004

Project:"Role of Ascorbate peroxidase in alleviating UV light induced damage in *Nicotiana tabacum"*

- Results: The project involves the assessment of UV stress tolerance of two genotypes (wild type and transgenic) using various biochemical parameters like APX activity, MDA content, Ascorbate, proline and H_2O_2 content.

RESEARCH GRANT

- **Start Up Research Grant (Young Scientist)** March 2016-March 2019 (completed)
  On 'Elucidating the Functional and Regulatory Aspects of Inositol Monophosphatase like Proteins (IMPL1 and IMPL2) from drought tolerant legume Chickpea (*Cicer arietinum*)'funded byScience and Engineering Research Board (SERB-DST), New Delhi

TECHNIQUES MASTERED

Agrobacterium Mediated Transformation, Plant Tissue Culture, DNA & RNA Isolation, Electrophoresis, Polymerase Chain Reaction, Real time PCR, Spectrophotometry, Gene cloning and bacterial expression, Protein purification, Enzyme assays, Antioxidative analysis of plant.

PUBLICATIONS

REFEREED RESEARCH PAPERS-

1. Yadav P, Salvi P, Kamble N, Petla BP, Majee M and **Saxena SC***. 2019. Deciphering the structural basis of the broad substrate specificity of myo-Inositol monophosphatase (IMP) from *Cicer arietinum*. ***International journal of biological macromolecules*** (In Press) [Impact factor-4.78]

2. **Saxena SC***, Salvi P, Kamble N, Joshi P, Majee M, Arora S. 2019. Ectopic overexpression of cytosolic ascorbate peroxidase gene (Apx1) improves salinity stress tolerance in *Brassica juncea* by strengthening antioxidative defense mechanism. ***Acta Physiologie Plantarum*** (In Press) [Impact factor-1.60] DOI: 10.1007/s11738-020-3032-5

3. Nath M, Bhatt D, Jain A, **Saxena SC**, Saifi SK , Yadav S, Negi M, Prasad R, Tuteja N. 2019. Salt stress triggers augmented levels of Na^+, Ca^{2+} and ROS and alter stress-responsive gene expression in roots of *CBL9* and *CIPK23* knockout mutants of *Arabidopsis thaliana.* ***Environmental and Experimental Botany*** 161: 265-276.

[Impact factor-3.66]

4. Rao V, Petla BP, Verma P, Salvi P, Kamble N, Ghosh S, Kaur H, **Saxena SC**, and Majee M. 2018. Arabidopsis SKP1-like protein 13 (ASK13) positively regulates seed germination and seedling growth under abiotic stresses. ***Journal of Experimental Botany*** 69(16): 3899–3915. [Impact factor-5.52]

5. Salvi P, **Saxena SC**, Kaur H, verma P, Petla BP, Rao V, Khosh S and Majee M. 2016. Differentially regulated Galactinol Synthase (*CaGolS*) in chickpea (*Cicer arietinum* L.) improves seed vigor, longevity by restricting ROS accumulation. ***Nature Scientific Reports*** 6, doi:10.1038/srep35088 [Impact factor-5.2]

6. Petla BP, Kamble NU, Meenu, Verma P, Ghosh S, Singh A, Rao V, Salvi P, Kaur H, **Saxena SC** and Majee M. 2015. Rice Protein L-Isoaspartyl methyltransferase isoforms differentially over accumulate during seed maturation to restrict deleterious isoAsp accumulation and implicate in seed vigor and longevity. ***New Phytologist*** 211(2),627-645 [Impact factor-7.6]

7. **Saxena SC**, Kaur H, verma P, Petla BP, Rao V, Salvi P and Majee M. 2013. Differentially expressed inositol monophosphatase gene (*CaIMP*) in chickpea (*Cicer arietinum* L.) encodes a lithium sensitive phosphatase enzyme with broad substrate specificity and improves seed germination and seedling growth under abiotic stresses. ***Journal of Experimental Botany*** 64(18), 5623-5639 [Impact factor-5.52]

8. Verma P, Kaur H, Petla BP, Rao V, **Saxena SC** and Majee M. 2013. Protein l-isoaspartyl methyltransferase2 gene is differentially expressed in chickpea and enhances seed vigor and longevity by reducing abnormal isoaspartyl accumulation predominantly in seed nuclear proteins. ***Plant physiology*** 161, 1141-1157 [Impact factor-6.8]

9. Kaur H, verma P, Petla BP, Rao V, **Saxena SC** and Majee M. 2012. Ectopic expression of the ABA inducible dehydration responsive chickpea L-Myo-inositol 1 -phosphate synthase 2 (CaMIPS2) in Arabidopsis enhances tolerance to salinity and dehydration stress. ***Planta*** 237, 321-335 [Impact factor-3.26]

10. Bhatt D, **Saxena SC**, Jain S, Dobriyal AK, Majee M and Arora S. 2013. Cloning and expression of a drought inducible *Eleusine coracana* Ascorbate peroxidase1 (Ec-*apx*1) and its real time quantification under varying degree of drought stress. ***Molecular Biology Reports*** 40, 1155-1165 [Impact factor-2.02]

11. Bhatt D, Negi M, Sharma P, **Saxena SC**, Dobriyal AK and Arora S. 2011. Responses to drought induced oxidative stress in five finger millet varieties differing in their

geographical distribution. ***Physiology & Molecular Biology of Plants***17(4), 347–353 [Impact factor-1.15]

12. Joshi PK, **Saxena SC** and Arora S. 2011. Characterization of *Brassica juncea* antioxidant potential under salinity stress. ***Acta Physiologiae Plantarum*** 33, 811-822 [Impact factor-1.60]

13. **Saxena SC**, Joshi PK, Grimm B and Arora S. 2011. Role of Ascorbate peroxidase in alleviating Ultra-Violet light induced damage in *Nicotiana tabacum*. ***Biologia*** (Section Cellular and Molecular Biology) 66/6, 1052—1059 [Impact factor-0.83]

14. Singh SK, Mishra DP, Joshi PK, **Saxena SC** and Arora S. 2007. An efficient protocol for regeneration in Indian mustard *Brassica juncea* (L.) ***International Journal of Basic and Applied Agricultural Research***. 5(1) 9-13.

BOOK CHAPTER:

1. **Saxena SC**, Kaur H, Verma P, Petla B P, Rao V, Majee M. 2013.Osmoprotectants: Potential for Crop Improvement under Adverse Conditions. In *Plant Acclimation to Environmental Stress*, ed. by Tuteja& Gill. **Springer** Science + Business Media, LLC 233 Spring street, New York, NY 10013, USA. pp197-232 (ISBN: 978-1-4614-5000-9).
2. **Saxena SC**, Joshi PK and Arora S. 2009. Functional validation of antioxidant genes of ascorbate glutathione pathway for developing abiotic stress tolerant genotypes. *ICAR sponsored Winter School on Integration of Molecular and Classical Techniques of Plant Breeding for Enhancing Crop Productivity,* (February 03-23)held at Dept. of Genetics & Plant Breeding, G.B.P.U.A&T, Pantnagar; India.

ARTICLES/REVIEW:

1. Pande A, **Saxena SC**, Thapliyal M, Guru SK, Kumar A and Arora S. 2018. Role of AP2/EREBP Transcription Factor Family in Environmental Stress Tolerance. *Cell & Cellular Life Sciences Journal* vol 3(1) (ISSN: 2578-4811).
2. Joshi PK, **Saxena SC**, Agarwal S and Arora S. 2008. Edible Vaccines: A panacea for developing countries. International Journal of Plant Science, Vol: 3(2), 654-658; July-December (ISSN: 0973-1547).
3. **Saxena SC**, Punetha H, Gaur AK and Arora S. 2005. Transgenic plants: A Panacea for Developing Countries. Ind. F. Dig; 10-14 (ISSN: 0537-1589).

A BRIEF ABOUT ORAL/ POSTER PRESENTATION/WORKSHOP

- Participated in **National Conference on "Neglected and Underutilized Crop Species for Food, Nutrition, Energy and Environment (NUCS-FNEE)"** held at the National Institute of Plant Genome Research (NIPGR), New Delhi on August 2, 2019.
- Participated in National Project Implementation Unit (NPIU) and World bank sponsored one week **Faculty Development Program** on "Recent developments in translational medicines (RDTM-2018)" under **TEQIP-III** (Technical Education Quality Improvement Program of Government of India) organized by Department of Biotechnology, Delhi Technological University, New Delhi, India (March 12-16, 2018)
- 85th SBC(I) Annual Meeting at CSIR-CFTRI, Mysore, India, November 21 -24, 2016 (**Oral presentation**) Symposium Theme:- "Innovations in biological research for health, disease and environment"
- Participated in National Project Implementation Unit (NPIU) and World bank sponsored one week **short term training program** on **"Research and Publication"** under TEQIP (Technical Education Quality Improvement Programme of Government of India) organized by Department of Humanities, Delhi Technological University, New Delhi, India (July 25-29, 2016)
- Participated in National Project Implementation Unit (NPIU) and World bank sponsored one week **Faculty Development Program** on **"Recent advances and challenges in power & energy for sustainable growth"** under TEQIP (Technical Education Quality Improvement Programme of Government of India) organized by Department of Electrical engineering, Delhi Technological University, New Delhi, India (June1-5, 2015)
- **Poster Presentation** in **International Symposium** on "Plant Biotechnology For food Security: New Frontiers" organized by SPBB & NRCPB, New Delhi, India (February 21-24, 2012).
- Participated in **National Workshop** on "Advances and challenges in next generation sequencing and bioinformatics of genome analysis" at NIPGR, New Delhi, India (March 28-30, 2011).
- Participated in **Biotikos' 11**, a workshop organized by TERI University, New Delhi, India (March 10, 2011)
- **Oral Presentation** in **3rdUttarakhand State Science Congress** organized by IIT Roorkee, India (November 10-11, 2008).
- Participated in **"Industry Academia Coordination Workshop- ICAW-2008"** held at G. B. Pant University of Agriculture & Technology, Pantnagar, India.
- Participated in Workshop on **Creation and Management of Biological Database** (February 22-24, 2007) held at G.B. Pant University of Agriculture & Technology, Pantnagar, India.
- Participated in a two days workshop on "**Linux for Biotechnological Applications**" (March 30-31, 2006), held at G.B. Pant University of Agriculture & Technology, Pantnagar, India.
- **Poster Presentation** in **73rd symposium** of **Society of Biological Chemists, India (2004).**

A BRIEF ABOUT EXTRA-CURRICULAR ACTIVITIES

- Secured **First Position** in University level Essay Competition (2nd Oct. 2007).
- Secured **3rd Position** in University level Poetry Competition (2006-2007).
- Secured **3rd Position** in University level Essay Competition (28th Feb. 2004).

PROFESSIONAL MEMBERSHIP

Life Member of Society of Biological Chemists, India (Membership No.- 2154)

REFERENCES

Sandeep Arora (Ph.D.)
Professor,
Dept. of Molecular Biology and Genetic Engg. (CBSH)
G.B. Pant Univ. Of Agri. & Tech., Pantnagar
Uttarakhand, 263145, INDIA.
plantstress@gmail.com
Phone +91-7055470555

Manoj Majee (Ph.D.)
Staff Scientist, Lab 203
National Institute of Plant Genome And Research
JNU Campus,
Aruna Asaf Ali Marg,
New Delhi, 110067, INDIA
manojmajee@nipgr.ac.in
Phone+91-9910673040

Manoj Prasad (Ph.D.)
Staff Scientist, Lab 103
National Institute of Plant Genome and Research
JNU Campus,
Aruna Asaf Ali Marg,
New Delhi, 110067, INDIA
manoj_prasad@nipgr.ac.in
Phone +91-9868316379