

Dr. Anita Rani Dua
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Director, WSRC, KUK
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Scientific Interests - Broad Research Areas: Antioxidants, Cell Signaling

Professional Experiences:

Jan 2019-till date-as Professor in Biochemistry in Institute of Integrated & Honors Studies, Kurukshetra University, Kurukshetra-India and March 2020-till date as Deputy Director, Women Research and Studies Centre, Kurukshetra University, Kurukshetra

Jan 2007-Jan 2019- as an Associate Professor in Biochemistry, University College, Kurukshetra University, Kurukshetra- India.

Oct 1994–Jan 2007- as an Assistant Professor in Biochemistry, University College, Kurukshetra University, Kurukshetra- India.

July 1992-Oct 1994- as Research Associate, Department of Biochemistry, College of Basic Science and Humanities, CCS Haryana Agricultural University, Hisar- India

Jan 1988-July 1992- as ICAR Senior Research Fellow, Department of Biochemistry, College of Basic Science and Humanities, CCS Haryana Agricultural University, Hisar- India

Academic Credentials and achievements:

Ph.D. (Biochemistry) from Department of Biochemistry, College of Basic Science and Humanities, CCS Haryana Agricultural University, Hisar- india -1992

“Effect of Cr (VI) on carbon metabolism on germinating peas seeds.”.with **Best Thesis Award 1992**

M.Sc. (First Class) in Biochemistry from Department of Biochemistry, College of Basic Science and Humanities, CCS Haryana Agricultural University, Hisar- india

“Regulation of Nitrate Reductase from rice seedlings” 1987

B.Sc. (Bachelor in Science) (First Class), Kurukshetra University, Kurukshetra, India - 1984.

Research projects

UGC Research Project (2005 – 2007) **In vitro antioxidant activities of Indian Spices.**

HDST Major Research Project (2015-18) **Strengthening of antioxidant defense system of human lymphocytes for prevention and management of chronic diseases prevailing in Haryana**

DST Research Project(2019-2022) **Development of cost-effective Technology for the enhancement of usability potential of Xylano-Pectinolytic synergism from a Bacterial isolate and their Applications in the production of Value Added Products from Natural Resources(In Process)**

ICMR Research Project (2020-2023) **Prevention of chemotherapy induced skeletal muscle atrophy using SAC/CNA: A potential therapy for cachexia', (In Process)**

NCW Research Project (2023) **An Appraisal of “Beti Bachchao Beti Padhao” Scheme in Haryana**

Courses Attended

1. **Orientation course** at Kurukshetra University ,Kurukshetra,Haryana June 2-29, 1995.
2. **Workshop** on Environmental Pollution and its Management ,1988.CCShau,Hisar,March 28-29.
3. **Legal literacy workshop** for university and college lady teachers. Women`s studies research centre .Kurukshetra University ,Kurukshetra,Haryana.Sep 19-20, 1998.
4. **Refresher Course in Biochemistry** at Avinashilingam University, Coimbatore Nov.19-Dec 16,1998.
5. **Refresher Course in Women`s studies** for Women Cell Incharges in colleges at Kurukshetra University ,Kurukshetra,Haryana June 20-21, 1999
6. **Refresher Course in Life Science** at Kurukshetra University ,Kurukshetra,Haryana Dec 7-27, 2000
7. **Refresher Course in Environmental Awareness** at H.P.University, Shimla Aug 5-24, 2002
8. **UGC sponsored Workshop** on Capacity Building for Women Managers in Higher Education. Kurukshetra University Kurukshetra.Nov.25-30,2006.
9. **National Workshop** on Awareness in Modern Instrumental Techniques .Deptt. Of Chemistry, Kurukshetra University ,Kurukshetra,Haryana Feb29-March 1, 2008.
10. National Workshop on Social Responsibility and Community Engagement in Higher Education- Policies and Practices; 4th-5th Aug, 2022; Department of Educational Policy, National Institute of Educational Planning and Administration (NIEPA)
11. “National level workshop-cum-discussion meet on the implementation of NEP 2020 in Higher Education” 9 Dec.2022. Department of Educational Administration, National Institute of Educational Planning and Administration(NIEPA)

List of Publications:

1. **Rani Anita**, Chugh L.K., Sawhney V. and Sawhney S.K.1990.Effect of cadmium and Chromium on seed germination and growth of peas. **Proc.EnvIRON. pollution** (ed.Arora,S.K.):66-77.
2. **Dua Anita** and Sawhney S.K.1991.Effect of Cr(VI) on activities of hydrolytic enzymes in germinating pea seeds.**Environ.Expt.Bot.**13(2):133-139.

3. Bishnoi N.R., **Dua Anita**, Gupta V.K. and Sawhney, S.K. 1993. Effect of chromium on seed germination, seedling growth and yield of Peas. **Agri.Ecosys.Environ.**47:47-57.
4. **Dua Anita**, Talwar Gurmeet, Singal H.R. and Singh R. 1993. CO₂ exchange, primary photochemical reactions and certain enzymes of PCR cycle of Brassica pods under reduced light intensity. **Proc.DAEsym.on Photosynthesis and Plant Molecular Biology**. PP97-103.
5. **Dua Anita**, Talwar Gurmeet, Singal H.R. and Singh R. 1993. CO₂ exchange, primary photochemical reactions and certain enzymes of PCR cycle of Brassica pods under water deficit. **Proc.DAEsym.on Photosynthesis and Plant Molecular Biology**. PP104-111.
6. **Dua Anita**, Talwar Gurmeet, Singal H.R. and Singh R. 1994. Changes in structural and function of photosynthetic apparatus of Brassica pods during seed maturation. **Indian J.Biochem.Biophys.**31:171-176.
7. **Dua Anita**, Talwar Gurmeet, Singal H.R. and Singh R. 1994. Changes in primary photochemical reactions and enzymes of photosynthetic carbon reduction cycle in Brassica pods during water stress and recovery. **Photosynthetica**302:261-268.
8. **Dua Anita**, Talwar Gurmeet, Singal H.R. and Singh R. 1994. Carbon metabolism of developing Brassica seeds. **XVI International Congress of Biochemistry and Molecular Biology**. New Delhi, Sept. 19-22.
9. Singal H.R., Talwar Gurmeet, **Dua Anita** and Singh, R. 1995. Pod photosynthesis and seed dark CO₂ fixation support oil synthesis in developing Brassica seeds **J.Biosci.**20(1):49-58.
10. Talwar, Gurmeet, **Dua Anita** and Singh, R. 1996. CO₂ exchange, primary photochemical reactions and certain enzymes of photosynthetic carbon reduction cycle of Brassica pods under reduced irradiance. **Photosynthetica**32(2):221-229.
11. **Dua Anita** and Sawhney S.K. 1996. Inhibition by chromium of early seedling growth, mobilization of seed reserves and respiration in germinating seeds. **Proc.National Symposium on Current trends in plant Biochemistry and Biotechnology** PP.102

12. **Dua Anita** and Sawhney S.K. 1998. Effect of chromium on hydrolysis of stores in germinating pea seeds. **Proc. State level seminar on Recent Trends in Biological Sciences Avinashilingum University ,Coimbatore**
13. **Dua Anita** and Sawhney S.K. 2002. Chromium evoked disturbances in respiratory activity of pea seeds. **Proc. National Symposium on New opportunities and challenges for crop productivity through Biotechnology**. CCS Haryana Agricultural University ,Hisar
14. Gupta, S.K., **Dua Anita** and Vohra, B.P.S. 2003. *Withania somnifera* (Ashwagandha) attenuates antioxidant defense in aged spinal cord and inhibits copper induced lipids peroxidation and protein oxidative modifications. **Drug Metabol Drug Interact** 19(3):211-22.
15. **Davar Vinti and Dua Anita** 2006. **Food security protects the environment and nutrition in** Saviour of UGC sponsored National Seminar on Environment Stress and Biodiversity. 2006. Nov. 8-9.
16. **Vinti Davar, Sonali Rathi and Anita Dua** 2012. **Antioxidant Properties of Coriandrum Sativum (Coriander)**. (*The FASEB Journal*. 2012;26:823.14)
17. **Dua, Anita**, Gupta S.K., Mittal A. and Mahajan Ritu. 2012. A study of antioxidant properties and antioxidant compounds of Cumin (*Cuminum cyminum*) **Int. J. Pharm. Biol. Arch.** 3(5):1057-1063. **IF 1.557**
18. **Dua Anita**, Garg G., Singh B. and Mahjan Ritu. 2013. Antimicrobial properties of methanolic extract of cumin (*Cuminum cyminum*) seeds. **Int. J. Res. Ayur. Pharm.** 4(1):104-107.
19. **Dua Anita**, Gupta S.K., Mittal A. and Mahajan Ritu. 2013. Bioreactive compounds and antioxidant properties of methanolic extract of Fennel (*Foeniculum vulgare* Miller). **Int. Res. J. Pharm.** 4(5);445-450.
20. **Dua Anita**, Vats S., Singh V. and Mahajan Ritu. 2013. Protection of biomolecules against *in vitro* oxidative damage by the antioxidants from methanolic extract of *Trigonella foenum-graecum* seeds. **Int. J. Pharm. Sci. Res.** 4 (8): 3080-3086.
21. **Dua Anita**, Gaurav G. and Mahajan Ritu 2013. Polyphenols, Flavonoids and Antimicrobial properties of methanolic extract of fennel (*Foeniculum vulgare* Miller). **Eur. J. Expt. Biol.** 4(4):203-208.
22. **Dua Anita**, Agrawal S, Kaur A. and Mahajan Ritu 2014. Antioxidant profile of *Coriandrum sativum* methanolic extract. **Int Res. J. Pharm** 5(3):220-224.
23. **Dua Anita**, Gaurav G., Kumar D. and Mahajan Ritu 2014. Polyphenolic composition and antimicrobial potential of methanolic coriander (*Coriandrum sativum*) seed extract. **Int. J. Pharm. Sci. Res.** 5(6) : 2302-2308.

24. **Dua Anita**, Chander S, Agrawal S and MahajanRitu 2014 Antioxidants from defatted Indian Mustard (*Brassica Juncea*) protect biomolecules against in vitro oxidation. **PhysiolMolBiol Plants**20 (4): 539-543. DOI 10.1007/s12298-014-0260-4.**IF 1.351**
25. **Dua Anita**, Garg G, Nagar S ,Mahajan R 2014Methanol extract of clove (*Syzygiumaromaticum Linn.*) damages cells and inhibits growth of enteropathogens. **J Innov Biology** 1 (4): 200-205
26. Avtar Singh, AmanjotKaur, **Anita Dua** and RituMahajan. 2015 An efficient and improved methodology for the screening of industrially valuable xylano-pectino-cellulolytic microbes. **Enzyme Research**Article ID 725281, 7 pages. <http://dx.doi.org/10.1155/2015/725281>
27. **Dua Anita**, Singh A and Mahajan R 2015. Antioxidants of clove (*syzygiumaromaticum*) prevent metal induced oxidative damage of biomolecules. **Int Res. J.Pharm**6(4): 273-278.
28. Garg G, Sharma S, **Dua Anita**, Mahajan R 2016. Antibacterial potential of polyphenol rich methanol extract of Cardamom (*Amomumsubulatum*) fruits. **J Innov Biology** 3(1): 271-275.
- 29.AmanjotKaur, Avtar Singh, **Anita Dua** and RituMahajan. 2016 Cost-effective and concurrent production ofindustrially valuable xylano-pectinolytic enzymes by a bacterial isolate *Bacillus pumilus* A JK Preparative Biochemistry and Biotechnology feb,2016 <http://dx.doi.org/10.1080/10826068.2016.1155059>
- 30.**Dua Anita**, Agrawal S, Singh A. and MahajanRitu 2016 Antioxidant and antimicrobial potential of polyphenols from foods in *Microbes in food and health* Eds. **Garg**, Neelam, **Abdel-Aziz**, Shadia Mohammad, **Aeron**, Abhinav (Eds.) PP 43-63ISBN 978-3-319-25275-9 Springer.com http://dx.doi.org/10.1007/978-3-319-25277-3_3
31. Gupta P., Bala, M., Gupta, SK., Dua A., Dabur R., Injeti E., Mittal A 2016 Efficacy and risk profile of anti-diabetic therapies: Conventional vs traditional drugs-A mechanistic revisit to understand their mode of action. **Pharmacol Res** 113;636-674 doi:10.1016/j.phrs.2016.09.029. **PMID: 27697646**
32. Vikas Dutta,1, Nirmaljeet Kaura,1, PrachiGuptaa, RavindraGujarb, Anita Grewalc, SanjeevGuptaa, Anita Duaa, Ashwani Mittal. 2017 Efficient and modified protocol for zymography to detect muscle specific calpain activity.**Biocatalysis and Agricultural Biotechnology** 10 (2017) 96–103.
33. **Anita Dua**1, **NirmaljeetKaur**, **Prachi Gupta**, **A. Mittal**, **S.K.Gupta**2017 Oxidative Stress Induced Cell Damage and Antioxidant Enzyme Response in Human Lymphocytes.**International Journal of Pharmaceutical & Biological Archives**; **8(3): 33-39**
34. Vijender Singh, Sanjeev Kumar Guptaand Anita Dua2018 Effect of polarity of solvents on *Cinnamomumzylanicum*bark extraction. **World J pharma Res** 7(9): 652-660

35. Dutt V, Saini V, Gupta P, Kaur N, Bala M, Gujar R, Grewal A, Gupta S, Dua A, Mittal A. 2018 S-allyl cysteine inhibits TNF α -induced skeletal muscle wasting through suppressing proteolysis and expression of inflammatory molecules. **BiochimBiophysActa**. 1862(4):895-906. doi: 10.1016/j.bbagen.2017.12.015. Epub 2017
36. Kaur N, Gupta P, Saini V, Sherawat S, Gupta S, Dua A, Kumar V., Injeti E, Mittal A. 2019 Cinnamaldehyde regulates H₂O₂ -induced skeletal muscle atrophy by ameliorating the proteolytic and antioxidant defense systems. **J Cell Physiol**. 234; 6194-6208. doi: 10.1002/jcp.27348.
37. Chaudhary A, Sharma S, Mittal A, Gupta S, Dua A. 2020 Phytochemical and antioxidant profiling of Ocimum sanctum. J Food Sci Technol <https://doi.org/10.1007/s13197-020-04417-2>
38. Prachi Guptaa, Vikas Dutta, Nirmaljeet Kaur , Priya Kalra, Sanjeev Gupta , Anita Dua , Rajesh Dabur , Vikram Saini , Ashwani Mittal. 2020
S-allyl cysteine: A potential compound against skeletal muscle atrophy BBA. 1864;129676. <https://doi.org/10.1016/j.bbagen.2020.129676>
39. Ashwani Mittal a , Anita Dua a , Sanjeev Gupta a , Elisha Injeti b. 2021 A research update: Significance of cytokine storm and diaphragm in COVID-19 Current Research in Pharmacology and Drug Discovery 2:10031

Books Published:

1. RituMahajan and **Anita Dua 2012. Introduction to Biotechnology** ;ISBN 978-93-82174-08-0 Vayu Publication NewDelhi.
2. **Anita Dua** and VintiDavar **2013. Nutritional Biochemistry- A Practical Approach;** ISBN978-81-261-5181-3Anmol Publication Pvt Limited. New Delhi.
3. **Anita Dua and Sanjeev Gupta 2015. Biochemistry and Human Physiology;**ISBN 978-81-261-6375-5Anmol Publication Pvt Limited. New Delhi.
4. **Anita Dua** and RituMahajan **2016. Clinical Biochemistry;**ISBN: 978-81-7139-680-1**JNANADA PRAKASHAN (P&D)**. New Delhi.
5. Anita Dua 2022. Immunology: ISBN: 978-1914187-45-2 Random Publishing UK Ltd.

Attended more than 50 conferences and presented papers

Reviewed research articles in the journals:

Journal of Essential oil bearing plants
Journal of Food Biochemistry
Pharmaceutical Biology

Academic Journals.org
African Journal of Pharmacy and Pharmacology
Indian Journal of Experimental Biology
Egyptian Journal of Biological Pest Control

Other assignments :

Member, core committee, implementation of CBCS-LOCF, Kurukshetra University, Kurukshetra

Member, core committee, implementation of NEP-2020, Kurukshetra University, Kurukshetra

Member, core committee, implementation of NEP-2020, Ch Ranbir Singh University, Jind.

Member, Internal Complaints Committee, National Institute of Technologies, Kurukshetra

Member, Adhoc committee for designing curriculum and guidelines for value added and activity courses, KUK

Member, Executive council, Kurukshetra University, Kurukshetra 2017-2019