

CURICULAM VITAE

Gagan Chhabra, Ph.D.

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Education

Ph.D. (Biotechnology) 2014; Jawaharlal Nehru University, New Delhi, India

MS (Biotechnology) 2006; Banaras Hindu University, Varanasi, India

BS (Zoology, Botany, Chemistry) 2003; CSJM University, Kanpur, India

Appointments/Positions:

- July 2020 –:** **Assistant Scientist**, University of Wisconsin, Department of Dermatology, Madison, WI, USA
- Sep 2016 – June 2020:** **Postdoctoral Research Associate**, University of Wisconsin, Department of Dermatology, Madison, WI, USA
- Feb 2015 – Aug 2016:** **Postdoctoral Research Scholar**, University of Illinois at Chicago, College of Medicine, Rockford, USA
- 2010 – 2014:** **Senior Research Fellow** (Indian Council of Medical Research), Jawaharlal Nehru University, New Delhi, India
- 2008-2010:** **Senior Research Fellow**, National Institute of Immunology, New Delhi, India
- 2006-2008:** **Junior Research Fellow**, National Institute of Immunology, New Delhi, India

Honors and Awards:

- Selected for fellowship from Society of Investigative Dermatology (SID) to attend and present work at the Society of Investigative Dermatology Annual Meeting (SID 2020).
- Received travel fellowship award from Society of Investigative Dermatology (SID) to attend the International Investigative Dermatology 2018 Meeting (IID 2018) held in Orlando, Florida, May 2018.
- Received travel award from Bio-Techne to attend AACR 2017 meeting held in Washington DC, April 2017.
- Awarded Senior Research Fellowship from Indian Council of Medical Research (ICMR), New Delhi.
- Qualified National Eligibility Test (NET) conducted by Council for Scientific and Industrial Research (CSIR) and University Grant Commission (UGC) of India in June 2006.
- Qualified GATE examination organized by IIT Kanpur, India in 2005.
- Awarded scholarship for Masters Studies by Department of Biotechnology, Govt. of India.

Editorial Boards Membership:

Academic Editor: Journal of Oncology

Topic Editor: Cancers

Scientific Review Editor: Frontiers in Oncology; Cancers

Scientific Reviewer:

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| 1. Cancer Letters | 8. Toxicology and Applied Pharmacology |
| 2. Cancers | 9. International Journal of Molecular Sciences |
| 3. Oncotarget | 10. Molecular Nutrition and Food Research |
| 4. Journal of Skin Cancer | 11. Photochemistry and Photobiology |
| 5. Molecules | 12. Marine drugs |
| 6. Journal of Clinical Medicine | 13. Pharmaceuticals |
| 7. Aging | |

Professional Memberships:

2016 – Present: American Association for Cancer Research (AACR)

2017 – Present: Society for Investigative Dermatology (SID)

Publications:

1. **Chhabra G**, Singh CK, Amiri D, Akula N, Ahmad N. Recent Advancements on Immunomodulatory Mechanisms of Resveratrol in Tumor Microenvironment. **Molecules**. 2021; 26(5):1343.
2. Su S*, **Chhabra G***, Ndiaye MA, Singh CK, Ye T, Huang W, Dewey CN, Setaluri V, Ahmad N. PLK1 and NOTCH Positively Correlate in Melanoma and their Combined Inhibition Results in Synergistic Modulations of Key Melanoma Pathways. **Mol Cancer Ther**. 2021; 20(1):161-172. (*Equal first authorship).
3. Garvey DR*, **Chhabra G***, Ndiaye MA*, Ahmad N. Role of polo-like kinase 4 (PLK4) in epithelial cancers and recent progress in its small molecule targeting for cancer management. **Mol Cancer Ther**. 2021; 20(4):632-640 (*Equal first authorship).
4. Singh CK, George J, **Chhabra G**, Nihal M, Chang H, Ahmad N. Genetic Manipulation of Sirtuin 3 Causes Alterations of Key Metabolic Regulators in Melanoma. **Front Oncol**. 2021; 11:676077.
5. Singh CK, **Chhabra G**, Patel A, Chang H, Ahmad N. Dietary Phytochemicals in Zinc Homeostasis: A Strategy for Prostate Cancer Management. **Nutrients**. 2021; 13(6):1867
6. Singh CK, **Chhabra G**, Ndiaye MA, Siddiqui IA, Panackal JE, Mintie CA, Ahmad N. Quercetin-Resveratrol Combination for Prostate Cancer Management in TRAMP Mice. **Cancers (Basel)**. 2020; 12(8):2141.
7. Garcia-Peterson LM, Ndiaye MA, **Chhabra G**, Singh CK, Guzmán-Pérez G, Iczkowski KA, Ahmad N. CRISPR/Cas9-mediated Knockout of SIRT6 Imparts Remarkable Anti-proliferative Response in Human Melanoma Cells in vitro and in vivo. **Photochem Photobiol**. 2020.
8. Singh CK, Mintie CA, Ndiaye MA, **Chhabra G**, Dakup PP, Ye T, Yu M, Ahmad N. Chemoprotective effects of dietary grape powder on ultraviolet B radiation-mediated skin carcinogenesis in SKH-1 hairless mice. **J Invest Dermatol**. 2019; 139(3):552-561.
9. **Chhabra G**, Garvey DR, Singh CK, Mintie CA, Ahmad N. Effects and Mechanism of Nicotinamide Against UVA- and/or UVB-mediated DNA Damages in Normal

- Melanocytes. **Photochem Photobiol.** 2019; 95(1):331-337.
10. Singh A, Fernandes JRD, **Chhabra G**, Krishna A, Banerjee A. Liraglutide modulates adipokine expression during adipogenesis, ameliorating obesity, and polycystic ovary syndrome in mice. **Endocrine.** 2019; 64(2):349-366.
 11. **Chhabra G**, Singh CK, Ndiaye MA, Fedorowicz S, Molot A, Ahmad N. Prostate cancer chemoprevention by natural agents: Clinical evidence and potential implications. **Cancer Lett.** 2018; 422:9-18.
 12. **Chhabra G**, Wojdyla L, Frakes M, Ivancich M, Vinay P, Schrank Z, Ramirez BE, Puri N. Mechanism of Action of G-quadruplex Forming Oligonucleotide Homologous to the Telomere Overhang in Melanoma. **J Invest Dermatol.** 2018; 138(4):903-910.
 13. Schrank Z, **Chhabra G**, Lin L, Iderzorig T, Osude C, Khan N, Kuckovic A, Singh S, Miller RJ, Puri N. Current Molecular-Targeted Therapies in NSCLC and Their Mechanism of Resistance. **Cancers (Basel).** 2018; 10(7). pii: E224.
 14. **Chhabra G**, Ndiaye MA, Garcia-Peterson LM, Ahmad N. Melanoma Chemoprevention: Current Status and Future Prospects. **Photochem Photobiol.** 2017; 93(4):975-989.
 15. Singh CK, **Chhabra G**, Ndiaye MA, Garcia-Peterson LM, Mack NJ, Ahmad N. The Role of Sirtuins in Antioxidant and Redox Signaling. **Antioxid Redox Signal.** 2018; 28(8):643-661.
 16. Garcia-Peterson LM, Ndiaye MA, Singh CK, **Chhabra G**, Huang W, Ahmad N. SIRT6 Histone Deacetylase Functions as a Potential Oncogene in Human Melanoma. **Genes Cancer.** 2017; 8(9-10):701-712.
 17. Rastogi I, Rajanna S, Webb A, **Chhabra G**, Webb B, Puri N. Mechanism of c-Met and EGFR tyrosine kinase inhibitor resistance through epithelial mesenchymal transition in non-small cell lung cancer. **Biochem Biophys Res Commun.** 2016; 2;477(4):937-44.
 18. Botting GM, Rastogi I, **Chhabra G**, Nlend M, Puri N. Mechanism of Resistance and Novel Targets Mediating Resistance to EGFR and c-Met Tyrosine Kinase Inhibitors in Non-Small Cell Lung Cancer. **PloS one.** 2015; 10(8):e0136155.
 19. **Chhabra G**, Eggert A, Puri N. Clinical Challenges to Current Molecularly Targeted Therapies in Lung Cancer. **Arch Cancer Res.** 2015; 3:30.
 20. **Chhabra G**, Dixit A. Structure modeling and antidiabetic activity of a seed protein of *Momordica charantia* in non-obese diabetic (NOD) mice. **Bioinformation.** 2013; 9(15):766-70.
 21. Choudhary SK, **Chhabra G**, Sharma D, Vashishta A, Ohri S, Dixit A. Comprehensive Evaluation of Anti-hyperglycemic Activity of Fractionated *Momordica charantia* Seed Extract in Alloxan-Induced Diabetic Rats. **Evid Based Complement Alternat Med.** 2012; 2012:293650.
 22. **Chhabra G**, Mathur D, Dixit A, Garg LC. Heterologous expression and biochemical characterization of recombinant alpha phosphoglucomutase from *Mycobacterium tuberculosis* H37Rv. **Protein Expr Purif.** 2012; 85(1):117-24.
 23. **Chhabra G**, Dixit A, L CG. DNA polymerase III alpha subunit from *Mycobacterium tuberculosis* H37Rv: Homology modeling and molecular docking of its inhibitor. **Bioinformation.** 2011; 6(2):69-73.
 24. **Chhabra G**, Upadhyaya T, Dixit A. Molecular cloning, sequence analysis and structure modeling of OmpR, the response regulator of *Aeromonas hydrophila*. **Mol Biol Rep.** 2012; 39(1):41-50.
 25. **Chhabra G**, Sharma P, Anant A, Deshmukh S, Kaushik H, et al. Identification and modelling of a drug target for *Clostridium perfringens* SM101. **Bioinformation.** 2010; 4(7):278-89.

26. Agarwal S, Gopal K, **Chhabra G**, Dixit A. Molecular cloning, sequence analysis and homology modeling of galE encoding UDP-galactose 4-epimerase of Aeromonas hydrophila. *Bioinformation*. 2009; 4(5):216-22.

Book Chapters:

1. Singh CK, **Chhabra G**, Mintie CA, Ahmad N. (2020) Grape Chemopreventive Agents Against Angiogenesis and Metastasis. In: Pezzuto J, Vang O. (eds) **Natural Products for Cancer Chemoprevention**. Springer, Cham.
2. Singh CK, **Chhabra G**, Ahmad N. Resveratrol and Cancer Cell Biology. **Resveratrol: State-of-the-Art Science and Health Applications**, World Scientific, 2018.
3. Botting GM, Rastogi I, **Chhabra G**, *et al.* Discovery of Biomarkers Mediating EGFR Tyrosine Kinase Inhibitor Resistance in Non-small Cell Lung Cancer: A Proteomics Approach. **Protein Purification: Principles and Trends**, iConcept Press Ltd. 1st Edition, 2016

Selected Conference Abstracts:

1. **Chhabra G. et al.** Anti-tumor effects and mechanism of 4'-bromo-resveratrol in a BRAF^{V600E}/PTEN^{Null} melanoma mouse model. *Journal of Investigative Dermatology*, 2020, 140(7):S93
2. **Chhabra G. et al.** Concomitant inhibition of SIRT1 and SIRT3 reduces melanoma growth and metastasis in BRAFV600E/PTENNULL transgenic mice. *Cancer Research*, 2020, 80 (16 Supplement), 2918-2918.
3. Singh CK, Ndiaye MA, **Chhabra G. et al.** Molecular analysis of atopic dermatitis pathogenesis in NC/NgaTnd mice. *Journal of Investigative Dermatology*, 2020, 140(7):S102
4. Su S, **Chhabra G. et al.** The combined inhibition of Plk1 and Notch1 results in a synergistic anti-proliferative response in human melanoma cells. Conference: Proceedings: AACR Annual Meeting 2019; March 29-April 3, 2019; Atlanta, GA
5. Singh CK, Ndiaye MA, **Chhabra G. et al.** Molecular analysis of chemopreventive effects of grape antioxidants resveratrol and quercetin in transgenic adenocarcinoma of the mouse prostate. Conference: Proceedings: AACR Annual Meeting 2019; March 29-April 3, 2019; Atlanta, GA
6. **Chhabra G. et al.** Polo-like kinase 1 positively correlates with N-cadherin and promotes EMT in melanoma. Conference: Proceedings: AACR Annual Meeting 2019; March 29-April 3, 2019; Atlanta, GA
7. **Chhabra G. et al.** Plk1 phosphorylates Numb and promotes EMT in melanoma. 2018 *Journal of Investigative Dermatology* 138(5):S213
8. **Chhabra G. et al.** Potential role of polo-like kinase 1 in epithelial-mesenchymal transition in melanoma. *Cancer Research* 2018, 78(13 Supplement):2016-2016
9. Singh CK, **Chhabra G. et al.**, Pro-proliferative function of the histone deacetylase SIRT3 in prostate cancer. *Cancer Research* 78 (13 Supplement), 539-539
10. **Chhabra G. et al.** Polo-like kinase 1 inhibition suppresses epithelial mesenchymal transition in melanoma. *Journal of Investigative Dermatology*, 2017, 137(10):B11
11. **Chhabra G. et al.** Mechanism of action of G-quadruplex forming oligonucleotide homologous to the telomere overhang in melanoma. *Journal of Investigative Dermatology*, 2017, 138(4)
12. Iderzorig T, **Chhabra G**, Puri N. Epithelial Mesenchymal Transition in TKI Resistant NSCLC with T790M Mutation. *Journal of Thoracic Oncology*, 2016, 11(11):S286

13. Rastogi I, Iderzorig T, **Chhabra G.** *et al.* Epithelial Mesenchymal Transition and its role in TKI resistant NSCLC cell lines. *Cancer Research*, 2016, 76(14 Supplement):1599-1599

Oral presentations:

1. Oral presentation in **SID Annual Meeting 2020**, entitled “Anti-tumor effects and mechanism of 4'-bromo-resveratrol in a BRAF^{V600E}/ PTEN^{NULL} melanoma mouse model”.
2. Oral presentation at **International Investigative Dermatology Meeting (IID- 2018)**, Orlando, Florida entitled “Plk1 phosphorylates Numb and promotes EMT in melanoma”.