CURRICULUM VITAE

MOHD JAVED AKHTAR, Ph.D.
Assistant Professor
King Abdullah Institute for Nanotechnology (KAIN),
King Saud University (KSU),
Riyadh-11451, Saudi Arabia
E-mail: mohd.j.akhtar@gmail.com, mjakhtar@ksu.edu.sa
Mob: 0559981310

WORK EXPERIENCE

Feb 2013- Present	Assistant Professor, King Abdullah Institute for Nanotechnology, King Saud University, Riyadh, Saudi Arabia
June 2012-Feb 2013	Research Scientist, Department of Zoology, University of Lucknow, Lucknow-226007, India
June 2009-June 2012	Senior Research Fellow, Indian Institute of Toxicology Research, Lucknow, India
June 2007-June 2009	Junior Research Fellow, Indian Institute of Toxicology Research, Lucknow, India.

EDUCATIONAL/ RESEARCH QUALIFICATIONS

2007-2012:	Ph. D. with specialization in ***biochemical and molecular toxicology*** from University of Lucknow, Lucknow-226007, (UP), India. Awarded in May, 2012
2000-2003:	Master degree with specialization in Zoology from V.B.S. Purvanchal University Jaunpur, (UP), India, in 2003
1997-2000:	Bachelor degree in Zoology & Chemistry from V.B.S. Purvanchal University Jaunpur, (UP), India, in 2000

DOCTORAL RESEARCH

Ph.D. title: *Cellular and Biochemical studies on the safety evaluation of micro- and nano-scale mineral particles of economic importance in India*

Ph.D. Supervisor

Prof. Sudhir Kumar, Human & Molecular Genetics section, Department of Zoology, University of Lucknow, Lucknow, India

REVIEWER OF INTERNATIONAL JOURNALS

1. Journal of Hazardous Materials (Elsevier Publisher)
2. Environmental Toxicology
3. International Journal of Biochemistry and Biotechnology (Hindawi Publisher)
4. World Journal of Hepatology (Baishideng Publishing Group)

PEER REVIEWED PUBLICATIONS

1. **Akhtar M.J.,** Ahamed M., Kumar S., Khan M.A., Ahmad J., Alrokayan S.A. 2012. Zinc oxide nanoparticles selectively induce apoptosis in human cancer cells through reactive oxygen species. *International Journal of Nanomedicine*, 7, 845–857. **(IF: 3.12)**

2. **Akhtar M.J**., Ahamed M., Fareed M., Alrokayan S.A., Kumar S. 2012. Protective effect of sulphoraphane against oxidative stress mediated toxicity induced by CuO NPs in mouse embryonic fibroblasts BALB 3T3. *The Journal of Toxicological Sciences,* 37, 139-148. **(IF: 1.8)**

3. **Akhtar M.J.,** Ahamed M., Alrokayan S.A., Ahmad I., Kumar S. 2012. Cytotoxicity and apoptosis induction by nano-scale talc particles from two different geographical regions in human lung epithelial cells. *Environmental Toxicology*, DOI 10.1002/tox **(IF: 2.592)**

4. **Akhtar M.J.,** Ahamed M., Kumar S., Siddiqui H., Patil G., Ashquin M., Ahmad I. 2010. Nanotoxicity of pure silica mediated through oxidant generation rather than glutathione depletion in human lung epithelial cells. *Toxicology,* 276, 95–102. **(IF: 3.681)**

5. **Akhtar M.J.,** Kumar S., Murthy R.C., Ashquin M., Khan MI, Patil G., Ahmad I. 2010. The primary role of iron-mediated lipid peroxidation in the differential cytotoxicity caused by two varieties of talc nanoparticles on A549 cells and lipid peroxidation inhibitory effect exerted by ascorbic acid. *Toxicology in Vitro*, 24, 1139– 1147. **(IF: 2.771)**

6. Ahamed M., **Akhtar M.J.,** Raja M., Ahmad I., Siddiqui M.K.J., AlSalhi M.S., Alrokayan S.A. 2011. ZnO nanorod induced apoptosis in human alveolar

adenocarcinoma cells via p53, survivin and bax/bcl-2 pathways: role of oxidative stress. *Nanomedicine-NBM*, 7, 904-913. **(IF: 6.692)**

7. Ahamed M., **Akhtar M.J.**, Siddiqui M.A., Ahmad J., Musarrat J., Al-Khedhairy A.A., AlSalhi M.S., Alrokayan S.A. 2011. Oxidative stress mediated apoptosis induced by nickel ferrite nanoparticles in cultured A549 cells. *Toxicology*, 283, 101-108. **(IF: 3.681)**

8. Ahamed M., Siddiqui M.A., **Akhtar M.J.,** Ahmad I., Pant A.B., Alhoshan M., Alhadlaq H.A. 2010. Genotoxic potential of copper oxide nanoparticles in human lung epithelial cells. *Biochemical and Biophysical Research Communications*, 396, 578-583. **(IF: 2.887)**

9. Ahmad I., Siddiqui H., **Akhtar M.J.,** Khan MI, Patil G., Ashquin M., Patel DK., Arif JM. 2011. Toxic responses in primary rat hepatocytes exposed with occupational dust collected from work environment of bone-based industrial unit. *Chemosphere*, 83(4):455-60. **(IF: 3.22)**

10. Ahamed M., **Akhtar M.J.,** Verma S., Kumar A., Siddiqui M. A., Siddiqui M. K. J. 2010. Environmental lead exposure as a risk for childhood aplastic anemia. *BioScience Trends*, 5 (1), 38-43.

11. Ahmad J., Ahamed M., **Akhtar M.J.,** Alrokayan S.A., Siddiqui M.A., Musarrat J., Al-Khedhairy A.A. 2012. Apoptosis induction by silica nanoparticles mediated through reactive oxygen species in human liver cell line HepG2. *Toxicology and Applied Pharmacology*, 259, 160–168. **(IF: 4.492)**

12. Ahamed M., Alhadlaq H.A., Khan M.A.M., **Akhtar M.J.** 2012. Selective killing of cancer cells by iron oxide nanoparticles mediated through reactive oxygen species via p53 pathway. Journal of Nanoparticle Research 14, 1225. **(IF: 3.287)**

MANUSCRIPT SUBMITTED

13. **Akhtar M.J.,** Ahamed M., Kumar S., Alhadlaq H.A., Kumar P., Alrokayan S.A. 2013. Cytotoxicity and genotoxicity effects exerted by CuO NPs mediated through oxidative stress in A549 cells. (Submitted).

Current Area of Research: Nano-therapeutics in Cancer

Targeting anticancer drugs to cancer and tumors has been a major challenge in the history of cancer management. As the fact applies to major disciplines of life sciences, as we are progressing towards a greater understanding of the mechanisms of cancer at biochemical and molecular level, the cancer biology itself has provided clues to the researchers that may be explored for a much better targeting of drugs to tumor tissues and, thus, a more successful treatment of cancer. As cancer cells and tissues express some unique receptors or in an amount that normal cells do not, and cancer cells and tissues express some enzymes too that are not found in normal tissues or very low level if found. These specific enzymes expressed in the cells and matrix of tumor tissues can be exploited to release anticancer drugs in situ if anticancer drugs on nanoparticles are bound with linkers that are cleavable by these enzymes. Recently much advancement have been achieved in the area of drug targeting using enzymes, receptors and pH of the cells and intra- and extracellular environments of tumor tissues. Another established biochemical feature of cancer is the higher oxidative stress than in normal counterparts and developing accurate stress sensitization and overload is another option to specifically demise cancer cells while sparing normal cells.

Keeping in view of molecular and biochemical differences between cancer and normal cells, we have developed certain plans in hope to cope cancer through the use nano-biotechnology. We want to check comparative anticancer efficiency of drug alone and loaded with nanoparticles as well as mechanism of cellular uptake of these nanoparticles alone and loaded with drugs. Our group aims to developing such nanocomposites (drug plus nanoparticles) linked with some sort of ligands which specifically bind with proteins and receptors expressed specifically in cancer cells; in short drug targeting to cancer cells.

At present our lab, with collaboration of our colleague Dr Maqusood Ahamed, is actively involved in exploiting the hallmarks of cancer in specifically targeting some anticancer drugs bound/encapsulated to nanoparticles of inorganic metals and other nano-conjugates to cancer cells using in vitro models