

Mechanism of Action and Their Side Effects at a Glance Prevention, Treatment and Management of Immune System and Human Cancer Nano Chemotherapy

Alireza Heidari*

Faculty of Chemistry, California South University, 14731 Comet St. Irvine, CA 92604, USA

Received: March 12, 2019; Accepted: March 22, 2019; Published: April 04, 2019

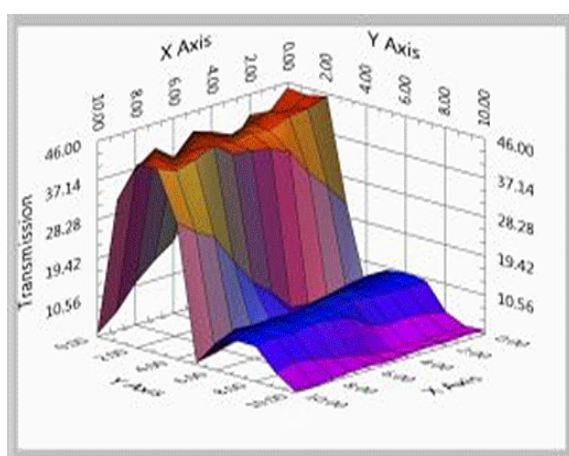
*Corresponding author: Alireza Heidari, Faculty of Chemistry, California South University, 14731 Comet St. Irvine, CA 92604, USA, E-Mail: Scholar.Researcher.Scientist@gmail.com

The current short communication will cover classification of all Nano chemotherapy anti-cancer Nano drugs, their mechanism of action dosage forms, dose, and their side effects and possible prevention.

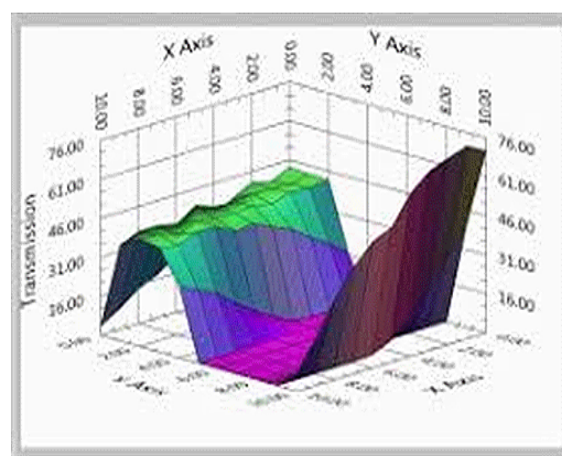
Furthermore, in the current research, we wish to add an anti-cancer Nano drug which will be covering all aspects about human cancer cells, tissues and tumors and their relationship with immune system, how proper immune system is crucial in prevention of human cancer in patients, how Nano chemotherapy can be implemented to enhance immunity of the body. And what are the do's and don'ts that a human cancer patient must follow to boost up the immune system along with the treatment methods to achieve better outcomes and other aspects of human cancer

and nutrition associated in simple yet elaborate way possible. In short, it will be describing how human cancer is a disease caused because of faulty immune system and how it can be prevented by simply boosting up the immune system [1-27].

In addition, in the current study, we wish to present an anti-cancer Nano drug delivery system (Figures 1 and 2) which will be covering all aspects about human cancer cells, tissues and tumors and their relationship with diet, how proper diet can be implemented in prevention, treatment and management of human cancer patients, how Nano chemotherapy can be implemented along with conventional treatment methods and techniques to achieve better outcomes and other aspects of human cancer and nutrition associated in simple yet elaborate way possible [28-52].



(a)



(b)

Figure 1 : Simulation of anti-cancer Nano drug delivery system in human cancer cells, tissues and tumors (a) before and (b) after anti-cancer Nano drug delivery [1-52].

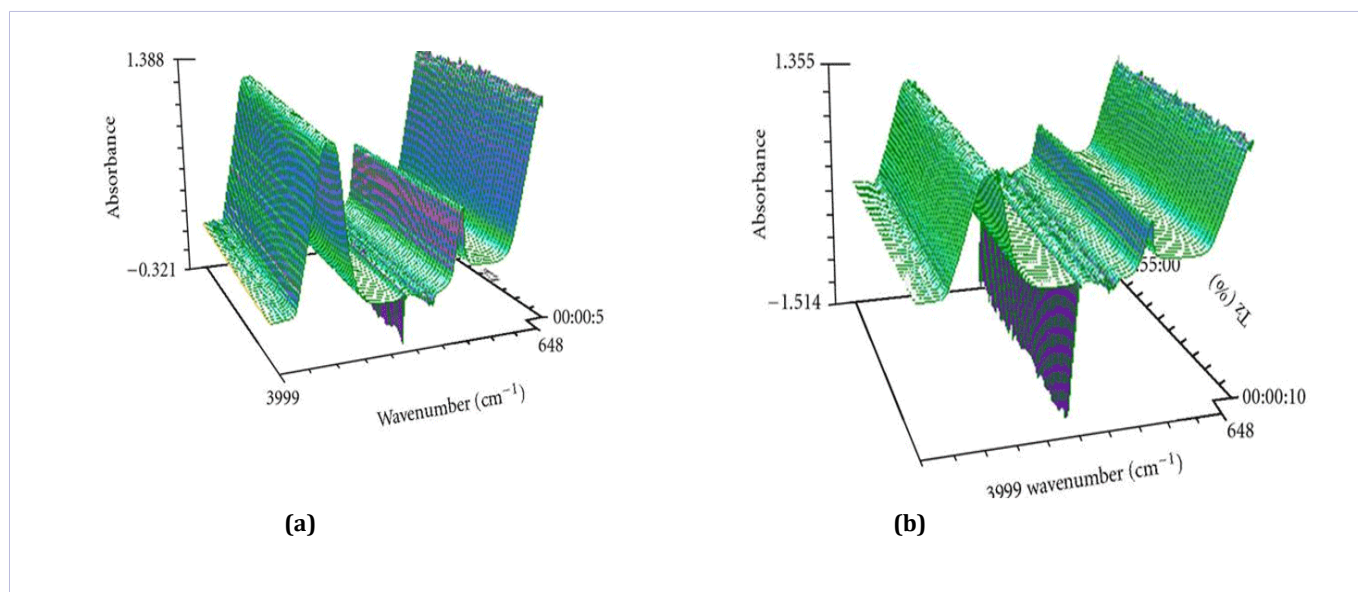


Figure 2 : Simulation of mechanism of action and their side effects at a glance prevention, treatment and management of immune system and human cancer Nano chemotherapy (a) before and (b) after anti-cancer Nano drug efficacy on human cancer cells, tissues and tumors [1–52].

References

1. A. Heidari, C. Brown. Study of Composition and Morphology of Cadmium Oxide (CdO) Nanoparticles for Eliminating Cancer Cells. *J Nanomed Res.* 2015; 2 (5): 20. DOI: 10.15406/jnmr.2015.02.00042
2. A. Heidari, C. Brown. Study of Surface Morphological, Phytochemical and Structural Characteristics of Rhodium (III) Oxide (Rh₂O₃) Nanoparticles. *International Journal of Pharmacology, Phytochemistry and Ethnomedicine.* 2015; 1(1): 15–19. doi:10.18052/www.scipress.com/IJPPE.1.15
3. A. Heidari. An Experimental Biospectroscopic Study on Seminal Plasma in Determination of Semen Quality for Evaluation of Male Infertility. *Int J Adv Technol.* 2016; 7(2): 2. doi: 10.4172/0976-4860.1000e007
4. A. Heidari. Extraction and Preconcentration of N-Tolyl-Sulfonyl-Phosphoramid-Saeure-Dichlorid as an Anti-Cancer Drug from Plants: A Pharmacognosy Study. *J Pharmacogn Nat Prod.* 2016; 2(2): 2. DOI: 10.4172/2472-0992.1000e103
5. A. Heidari. A Thermodynamic Study on Hydration and Dehydration of DNA and RNA-Amphiphile Complexes. *J Bioeng Biomed Sci.* 2016; 2. DOI: 10.4172/2155-9538.S3-006
6. A. Heidari. Computational Studies on Molecular Structures and Carbonyl and Ketene Groups' Effects of Singlet and Triplet Energies of Azidoketene O=C=CH-NNN and Isocyanatoketene O=C=CH-N=C=O. *J Appl Computat Math.* 2016;5(1): doi:10.4172/2168-9679.1000e142
7. A. Heidari. Study of Irradiations to Enhance the Induces the Dissociation of Hydrogen Bonds between Peptide Chains and Transition from Helix Structure to Random Coil Structure Using ATR-FTIR, Raman and 1H NMR Spectroscopies. *J Biomol Res Ther.* 2016; 5(2): doi: 10.4172/2167-7956.1000e146
8. A. Heidari. Future Prospects of Point Fluorescence Spectroscopy, Fluorescence Imaging and Fluorescence Endoscopy in Photodynamic Therapy (PDT) for Cancer Cells. *J Bioanal Biomed.* 2016; doi: 10.4172/1948-593X.1000e135
9. A. Heidari. A Bio-Spectroscopic Study of DNA Density and Color Role as Determining Factor for Absorbed Irradiation in Cancer Cells. *Adv Cancer Prev.* 2016; 8. doi:10.4172/acp.1000e102
10. A. Heidari. Manufacturing Process of Solar Cells Using Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh₂O₃) Nanoparticles. *J Biotechnol Biomater.* 2016; 6:e125. Doi:10.4172/2155-952X.1000e125
11. A. Heidari. A Novel Experimental and Computational Approach to Photobiosimulation of Telomeric DNA/RNA: A Biospectroscopic and Photobiological Study. *J Res Development.* 2016; 4(1): 144. Doi:10.4172/2311-3278.1000144
12. A. Heidari. Biochemical and Pharmacodynamical Study of Microporous Molecularly Imprinted Polymer Selective for Vancomycin, Teicoplanin, Oritavancin, Telavancin and Dalbavancin Binding. *Biochem Physiol.* 2016; 5(2): e146. Doi: 10.4172/2168-9652.1000e146
13. A. Heidari. Anti-Cancer Effect of UV Irradiation at Presence of Cadmium Oxide (CdO) Nanoparticles on DNA of Cancer Cells: A Photodynamic Therapy Study. *Arch Cancer Res.* 2016; 4: 1.
14. A. Heidari. Biospectroscopic Study on Multi-Component Reactions (MCRs) in Two A-Type and B-Type Conformations of Nucleic Acids to Determine Ligand Binding Modes, Binding Constant and Stability of Nucleic Acids in Cadmium Oxide (CdO) Nanoparticles-Nucleic Acids Complexes as Anti-Cancer Drugs. *Arch Cancer Res.* 2016; 4: 2.
15. A. Heidari. Simulation of Temperature Distribution of DNA/RNA of Human Cancer Cells Using Time-Dependent Bio-Heat Equation and Nd: YAG Lasers. *Arch Cancer Res.* 2016; 4: 2.

- 16.A Heidari. Quantitative Structure–Activity Relationship (QSAR) Approximation for Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh2O3) Nanoparticles as Anti–Cancer Drugs for the Catalytic Formation of Proviral DNA from Viral RNA Using Multiple Linear and Non–Linear Correlation Approach. *Ann Clin Lab Res.*2016; 4: 1.
- 17.A Heidari. Biomedical Study of Cancer Cells DNA Therapy Using Laser Irradiations at Presence of Intelligent Nanoparticles. *J Biomedical Sci.*2016; 5: 2. Doi:10.4172/2254-609X.100023
- 18.A Heidari. Measurement the Amount of Vitamin D2 (Ergocalciferol), Vitamin D3 (Cholecalciferol) and Absorbable Calcium (Ca2+), Iron (II) (Fe2+), Magnesium (Mg2+), Phosphate (PO4-) and Zinc (Zn2+) in Apricot Using High–Performance Liquid Chromatography (HPLC) and Spectroscopic Techniques. *J Biom Biostat.* 2016; 7: 292. Doi:10.4172/2155-6180.1000292
- 19.A Heidari. Spectroscopy and Quantum Mechanics of the Helium Dimer (He2+), Neon Dimer (Ne2+), Argon Dimer (Ar2+), Krypton Dimer (Kr2+), Xenon Dimer (Xe2+), Radon Dimer(Rn2+) and Ununoctium Dimer (Uuo2+) Molecular Cations. *Chem Sci J.* 2016;7:e112. Doi:10.4172/2150-3494.1000e112
- 20.A Heidari. Human Toxicity Photodynamic Therapy Studies on DNA/RNA Complexes as a Promising New Sensitizer for the Treatment of Malignant Tumors Using Bio–Spectroscopic Techniques. *J Drug Metab Toxicol.* 2016; 7:e129. doi:10.4172/2157-7609.1000e129
- 21.A Heidari. Novel and Stable Modifications of Intelligent Cadmium Oxide (CdO) Nanoparticles as Anti–Cancer Drug in Formation of Nucleic Acids Complexes for Human Cancer Cells' Treatment. *Biochem Pharmacol (Los Angel).*2016; 5(3): 207. Doi:10.4172/2167-0501.1000207
- 22.A Heidari. A Combined Computational and QM/MM Molecular Dynamics Study on Boron Nitride Nanotubes (BNNTs), Amorphous Boron Nitride Nanotubes (a–BNNTs) and Hexagonal Boron Nitride Nanotubes (h–BNNTs) as Hydrogen Storage. *Struct Chem Crystallogr Commun* 2016;
- 23.A Heidari. Pharmaceutical and Analytical Chemistry Study of Cadmium Oxide (CdO) Nanoparticles Synthesis Methods and Properties as Anti–Cancer Drug and its Effect on Human Cancer Cells. *Pharm Anal Chem Open Access.*2016; 2(2): 113. Doi:10.4172/2471-2698.1000113
- 24.A Heidari. A Chemotherapeutic and Biospectroscopic Investigation of the Interaction of Double–Standard DNA/RNA–Binding Molecules with Cadmium Oxide (CdO) and Rhodium (III) Oxide (Rh2O3) Nanoparticles as Anti–Cancer Drugs for Cancer Cells' Treatment. *Chemo Open Access.* 2016; 5: e129. doi:10.4172/2167-7700.1000e129
- 25.A Heidari. Pharmacokinetics and Experimental Therapeutic Study of DNA and Other Biomolecules Using Lasers: Advantages and Applications. *J Pharmacokinet Exp Ther.*2016; 1(1): e005. doi:10.4172/jpet.1000e005
- 26.A Heidari. Determination of Ratio and Stability Constant of DNA/RNA in Human Cancer Cells and Cadmium Oxide (CdO) Nanoparticles Complexes Using Analytical Electrochemical and Spectroscopic Techniques. *Insights Anal Electrochem.* 2016;
- 27.A Heidari. Discriminate between Antibacterial and Non–Antibacterial Drugs Artificial Neural Networks of a Multilayer Perceptron (MLP) Type Using a Set of Topological Descriptors. *J Heavy Met Toxicity Dis.*2016; 1: 2.
- 28.A Heidari. Combined Theoretical and Computational Study of the Belousov–Zhabotinsky Chaotic Reaction and Curtius Rearrangement for Synthesis of Mechlorethamine, Cisplatin, Streptozotocin, Cyclophosphamide, Melphalan, Busulphan and BCNU as Anti–Cancer Drugs. *Insights Med Phys.*2016; 1: 2.
- 29.A Heidari. A Translational Biomedical Approach to Structural Arrangement of Amino Acids' Complexes: A Combined Theoretical and Computational Study. *Transl Biomed.* 2016; 7: 2.
- 30.A Heidari. Ab Initio and Density Functional Theory (DFT) Studies of Dynamic NMR Shielding Tensors and Vibrational Frequencies of DNA/RNA and Cadmium Oxide (CdO) Nanoparticles Complexes in Human Cancer Cells. *J Nanomedicine Biotherapeutic Discov.* 2016; 6:e144. Doi:10.4172/2155-983X.1000e144
- 31.A. Heidari. Molecular Dynamics and Monte–Carlo Simulations for Replacement Sugars in Insulin Resistance, Obesity, LDL Cholesterol, Triglycerides, Metabolic Syndrome, Type 2 Diabetes and Cardiovascular Disease: A Glycobiological Study. *J Glycobiol.* 2016; 5(1): doi: 10.4172/2168-958X.1000e111
- 32.A. Heidari. Synthesis and Study of 5–[(Phenylsulfonyl)Amino]–1,3,4–Thiadiazole–2–Sulfonamide as Potential Anti–Pertussis Drug Using Chromatography and Spectroscopy Techniques. *Transl Med (Sunnyvale).* 2016; doi: 10.4172/2161-1025.1000e137
- 33.A. Heidari. Nitrogen, Oxygen, Phosphorus and Sulphur Heterocyclic Anti–Cancer Nano Drugs Separation in the Supercritical Fluid of Ozone (O3) Using Soave–Redlich–Kwong (SRK) and Pang–Robinson (PR) Equations. *Electronic J Biol.* 2016; 12(3): 300-301.
- 34.A. Heidari. An Analytical and Computational Infrared Spectroscopic Review of Vibrational Modes in Nucleic Acids. *Austin J Anal Pharm Chem.* 2016; 3 (1): 1058.
- 35.A. Heidari, C. Brown. Phase, Composition and Morphology Study and Analysis of Os–Pd/HfC Nanocomposites. *Nano Res Appl.* 2016; 2(1).
- 36.A. Heidari, C. Brown. Vibrational Spectroscopic Study of Intensities and Shifts of Symmetric Vibration Modes of Ozone Diluted by Cumene. *International Journal of Advanced Chemistry.* 2016; 4 (1): 5–9. doi:10.14419/ijac.v4i1.6080
- 37.A. Heidari. Study of the Role of Anti–Cancer Molecules with Different Sizes for Decreasing Corresponding Bulk Tumor Multiple Organs or Tissues. *Arch Can Res.* 2016; 4(2).

- 38.A. Heidari. Genomics and Proteomics Studies of Zolpidem, Necopidem, Alpidem, Saripidem, Miroprofen, Zolimidine, Olprinone and Abafungin as Anti-Tumor, Peptide Antibiotics, Antiviral and Central Nervous System (CNS) Drugs. *J Data Mining Genomics & Proteomics*.2016; 7(3): DOI: 10.4172/2153-0602.1000e125
- 39.A. Heidari. Pharmacogenomics and Pharmacoproteomics Studies of Phosphodiesterase-5 (PDE5) Inhibitors and Paclitaxel Albumin-Stabilized Nanoparticles as Sandwiched Anti-Cancer Nano Drugs between Two DNA/RNA Molecules of Human Cancer Cells. *J Pharmacogenomics Pharmacoproteomics*. 2016; doi: 10.4172/2153-0645.1000e153
- 40.A. Heidari. Biotranslational Medical and Biospectroscopic Studies of Cadmium Oxide (CdO) Nanoparticles-DNA/RNA Straight and Cycle Chain Complexes as Potent Anti-Viral, Anti-Tumor and Anti-Microbial Drugs: A Clinical Approach *Transl Biomed*. 2016; 7(2).
- 41.A. Heidari. A Comparative Study on Simultaneous Determination and Separation of Adsorbed Cadmium Oxide (CdO) Nanoparticles on DNA/RNA of Human Cancer Cells Using Biospectroscopic Techniques and Dielectrophoresis (DEP) Method. *Arch Can Res*. 2016; 4(2).
- 42.A. Heidari. Cheminformatics and System Chemistry of Cisplatin, Carboplatin, Nedaplatin, Oxaliplatin, Heptaplatin and Lobaplatin as Anti-Cancer Nano Drugs: A Combined Computational and Experimental Study. *J Inform Data Min*. 2016; doi: 10.21767/2472-1956.100015
- 43.A. Heidari. Linear and Non-Linear Quantitative Structure-Anti-Cancer-Activity Relationship (QSACAR) Study of Hydrous Ruthenium (IV) Oxide (RuO₂) Nanoparticles as Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) and Anti-Cancer Nano Drugs. *J Integr Oncol*. 2016; 5(3): DOI: 10.4172/2329-6771.1000e110
- 44.A. Heidari. Synthesis, Characterization and Biospectroscopic Studies of Cadmium Oxide (CdO) Nanoparticles-Nucleic Acids Complexes Absence of Soluble Polymer as a Protective Agent Using Nucleic Acids Condensation and Solution Reduction Method. *J Nanosci Curr Res*. 2016; 1(1): DOI: 10.4172/2572-0813.1000e101
- 45.A. Heidari. Coplanarity and Collinearity of 4'-Dinonyl-2,2'-Bithiazole in One Domain of Bleomycin and Pingyangmycin to be Responsible for Binding of Cadmium Oxide (CdO) Nanoparticles to DNA/RNA Bidentate Ligands as Anti-Tumor Nano Drug. *Int J Drug Dev & Res*. 2016;007-008.
- 46.A. Heidari. A Pharmacovigilance Study on Linear and Non-Linear Quantitative Structure (Chromatographic) Retention Relationships (QSRR) Models for the Prediction of Retention Time of Anti-Cancer Nano Drugs under Synchrotron Radiations. *J Pharmacovigil*. 2016; 4(4):2. doi: 10.4172/2329-6887.1000e161
- 47.A. Heidari. Nanotechnology in Preparation of Semipermeable Polymers. *J Adv Chem Eng*. 2016; 6(2).
- 48.A. Heidari. A Gastrointestinal Study on Linear and Non-Linear Quantitative Structure (Chromatographic) Retention Relationships (QSRR) Models for Analysis 5-Aminosalicylates Nano Particles as Digestive System Nano Drugs under Synchrotron Radiations. *J Gastrointest Dig Syst*.2016; 6(4): DOI: 10.4172/2161-069X.1000e119
- 49.A. Heidari. DNA/RNA Fragmentation and Cytolysis in Human Cancer Cells Treated with Diphthamide Nano Particles Derivatives. *Biomedical Data Mining*. 2016; doi: 10.4172/2090-4924.1000e102
- 50.A. Heidari. A Successful Strategy for the Prediction of Solubility in the Construction of Quantitative Structure-Activity Relationship (QSAR) and Quantitative Structure-Property Relationship (QSPR) under Synchrotron Radiations Using Genetic Function Approximation (GFA) Algorithm. *J Mol Biol Biotechnol*. 2016; 1(1).
- 51.A. Heidari. Computational Study on Molecular Structures of C20, C60, C240, C540, C960, C2160 and C3840 Fullerene Nano Molecules under Synchrotron Radiations Using Fuzzy Logic. *J Material Sci Eng*. 2016; 5(5): DOI: 10.4172/2169-0022.1000282
- 52.A. Heidari. Graph Theoretical Analysis of Zigzag Polyhexamethylene Biguanide, Polyhexamethylene Adipamide, Polyhexamethylene Biguanide Gauze and Polyhexamethylene Biguanide Hydrochloride (PHMB) Boron Nitride Nanotubes (BNNTs), Amorphous Boron Nitride Nanotubes (a-BNNTs) and Hexagonal Boron Nitride Nanotubes (h-BNNTs). *J Appl Computat Math*. 2016; 5(5): doi: 10.4172/2168-9679.1000e143