

Use of molecular enzymes in the treatment of chronic disorders

Alireza Heidari

Faculty of Chemistry, California South University, USA

Correspondence: Alireza Heidari, Faculty of Chemistry, California South University, 14731 Comet St. Irvine, CA 92604, USA, Email Scholar.Researcher.Scientist@gmail.com, Alireza.Heidari@calsu.us

Received: July 09, 2018 | **Published:** August 01, 2018

Copyright© 2018 Heidari. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Keywords: essential thrombocythemia, polycythemia vera, Skatole, Pterodactyladiene, tie fighter

Editorial

Advances in nanotechnology cause that many researchers try to solve their problems by introducing the nanoscale science to their research area. Use of nanomaterials such as Fucitol, Pterodactyladiene, DEAD or DEADCAT (DiEthyl AzoDiCARboxylaTe), Skatole, the NanoPutians, Thebacon, Pikachurin, Tie Fighter, Spermidine and Mirasorvone Nano molecules as molecular enzymes and drug targets in oncology science for Chronic Myelogenous Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment under synchrotron and synchrocyclotron radiations is one of the most important research areas in all over the world (Figure 1). Membrane filtration is common processes for human blood cancer cells purification which face the cancer problem as the most reducing factor of process efficiency. Nanoscale materials such as Fucitol, Pterodactyladiene, DEAD or DEADCAT (DiEthyl AzoDiCARboxylaTe), Skatole, the NanoPutians, Thebacon, Pikachurin, Tie Fighter, Spermidine and Mirasorvone Nano molecules (Figure 2) as molecular enzymes and drug targets in oncology science for Chronic Myelogenous Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment under synchrotron and synchrocyclotron radiations are emerging to oncology, specially Chronic Myelogenous Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment, by concept of nanocatalysts, nanosorbents, nanostructure catalytic membranes and nanoparticles enhanced filtration. The objective of this editorial is to provide molecular enzymes and drug targets utilities and deliveries with information regarding to nanoscience. There are many technical issues surrounded the nanomaterials. This editorial was intended to touch on an array of topics including use of nanofiltration in Chronic Myelogenous Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment

under synchrotron and synchrocyclotron radiations highlighting the recent advances on the development of novel nanoscale materials and processes for treatment of Chronic Myelogenous Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia under synchrotron and synchrocyclotron radiations. In addition, we discuss the anti-cancer effects of nanomaterials such as Fucitol, Pterodactyladiene, DEAD or DEADCAT (DiEthyl AzoDiCARboxylaTe), Skatole, the NanoPutians, Thebacon, Pikachurin, Tie Fighter, Spermidine and Mirasorvone for human blood cells biological and oncological control and monitoring.¹⁻³⁰

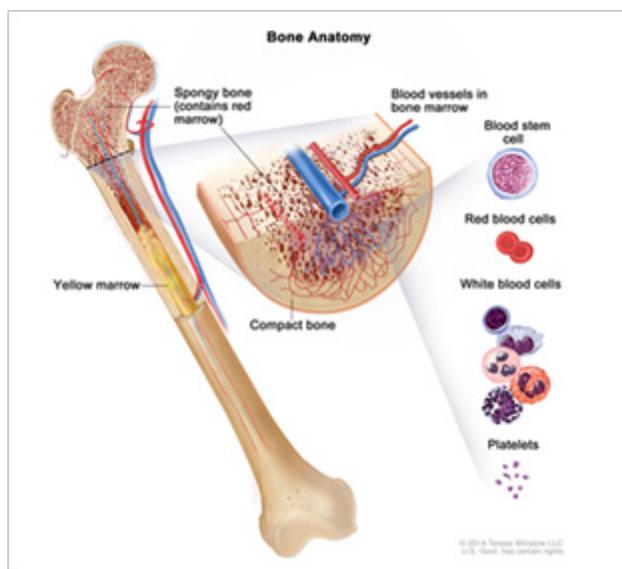


Figure 1 Schematic of a human blood stem cell may become a myeloid stem cell or a lymphoid stem cell. A lymphoid stem cell becomes a white blood cell.

On the other hand, nowadays, on the main biological and oncological concerns is the elimination of the heavy metals toxicity and diseases in disruption of Extracellular Matrix (ECM) proteins and cell adhesion intelligent nanomolecules adjustment in Chronic Myelogenous

Leukemia, Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment using metalloenzymes and under synchrotron and synchrocyclotron radiations, caused by heavy metals polluted human blood that could bring about many health problems to human beings such as blood cancer diseases. In natural environment there are non-organic heavy metals in the different forms of which concentrated large quantities have been spotted. Nanofiltration technology has a good potential for integration with current Chronic Myelogenous Leukemia,

Polycythemia Vera, Primary Myelofibrosis (Chronic Idiopathic Myelofibrosis), Essential Thrombocythemia, Chronic Neutrophilic Leukemia and Chronic Eosinophilic Leukemia treatment to perform cancer control and monitoring. In this editorial, in an attempt to enhance the heavy metals removal with different concentrations feed to a nanofiltration system. For better understanding of effects of operational conditions, different pressures applied as well as varied temperature. Increasing the operational pressure has a positive effect in rejection rate. However, rising the temperature deteriorated the overall heavy metals removal.³¹⁻⁵⁵

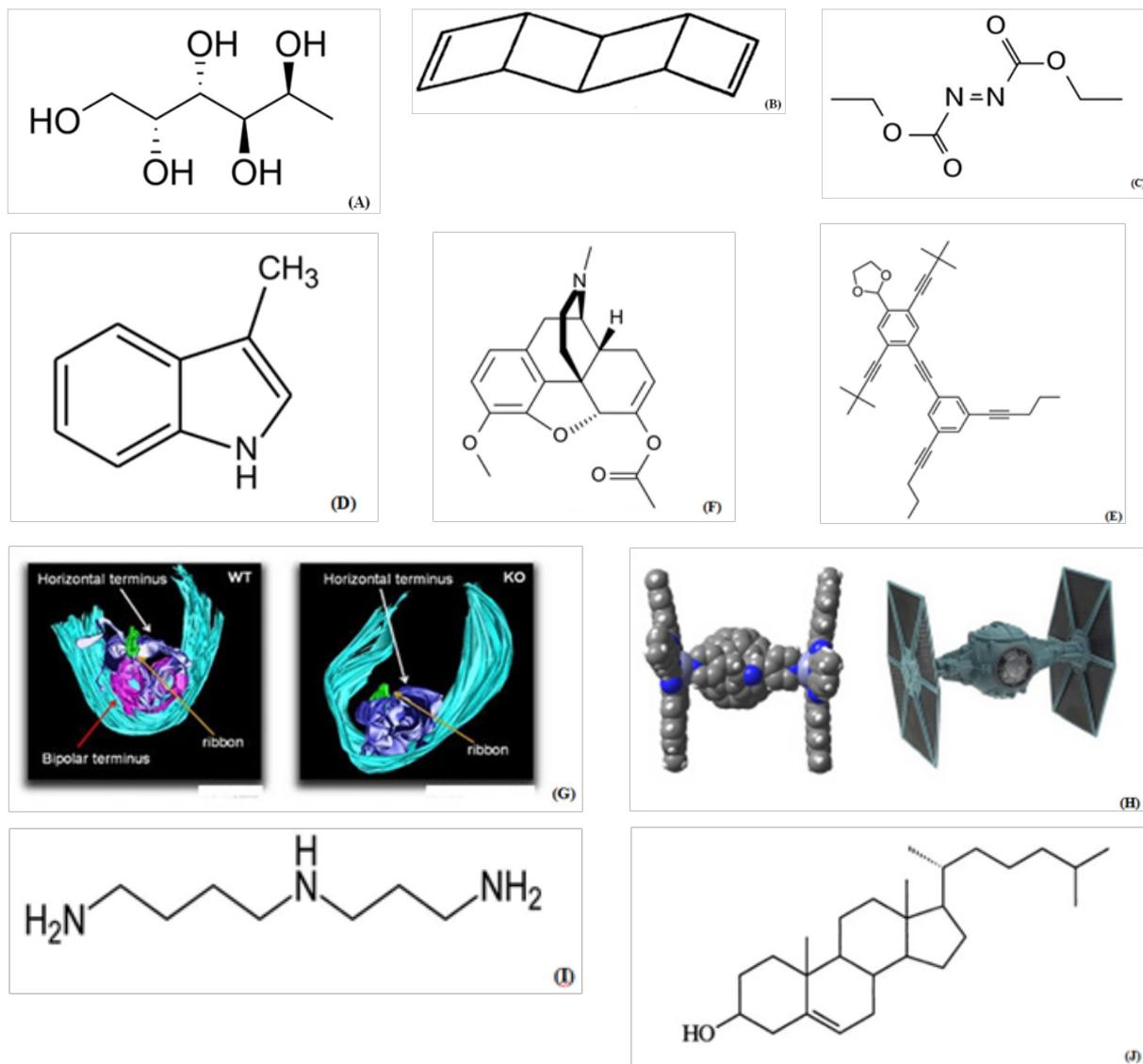


Figure 2 Molecular structure of (A) Fucitol, (B) Pterodactyladiene, (C) DEAD or DEADCAT (DiEthyl AzoDiCarboxylaTe), (D) Skatole, (E) the NanoPutians, (F) Thebacon, (G) Pikachurin, (H) Tie Fighter, (I) Spermidine and (J) Mirasorvone Nano molecules.

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

References

- Alireza Heidari. Christopher brown. Study of composition and morphology of cadmium oxide (CdO) nanoparticles for eliminating cancer cells. *Journal of Nanomedicine Research*. 2015;2(5):20.
- Alireza Heidari. Christopher Brown. Study of surface morphological, phytochemical and structural characteristics of rhodium (III) oxide (Rh₂O₃) nanoparticles. *International Journal of Pharmacology Phytochemistry and Ethnomedicine*. 2015;1:15–19.
- Alireza Heidari. An experimental biospectroscopic study on seminal plasma in determination of semen quality for evaluation of male infertility. *Int J Adv Technol*. 2016;7:e007.
- Alireza 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:e103.
- Alireza Heidari. A Thermodynamic study on hydration and dehydration of DNA and RNA–amphiphile complexes. *J Bioeng Biomed Sci*. 2016;006.
- Alireza Heidari. Computational studies on molecular structures and carbonyl and ketene groups' effects of singlet and triplet energies of azidoketene O=C=CH–N=N and isocyanatoketene O=C=CH–N=C=O. *J Appl Computat Math*. 2016;5:e142.
- Alireza 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:e146.
- Alireza Heidari. Future prospects of point fluorescence spectroscopy, fluorescence imaging and fluorescence endoscopy in photodynamic therapy (PDT) for cancer cells. *J Bioanal Biomed*. 2016;8:e135.
- Alireza Heidari. A Bio–spectroscopic study of DNA density and color role as determining factor for absorbed irradiation in cancer cells. *Adv Cancer Prev*. 2016;1:e102.
- Alireza Heidari. Manufacturing process of solar cells using cadmium oxide (CdO) and Rhodium (III) Oxide (Rh₂O₃) Nanoparticles. *J Biotechnol Biomater*. 2016;6:e125.
- Alireza Heidari. A novel experimental and computational approach to photobiosimulation of telomeric DNA/RNA: A biospectroscopic and photobiological study. *J Res Development*. 2011;4:144.
- Alireza Heidari. Biochemical and pharmacodynamical study of microporous molecularly imprinted polymer selective for vancomycin, teicoplanin, oritavancin, telavancin and dalbavancin binding. *Biochem Physiol*. 2012;5:e146.
- Alireza 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.
- Alireza 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.
- Alireza 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.
- Alireza 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.
- Alireza Heidari. Biomedical study of cancer cells DNA therapy using laser irradiations at presence of intelligent nanoparticles. *J Biomedical Sci*. 2016;5:2.
- Alireza 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.
- Alireza 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.
- Alireza 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.
- Alireza 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;5:207.
- Alireza 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*. 2002;2:1.
- Alireza 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;2:113.
- Alireza 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.
- Alireza Heidari. Pharmacokinetics and experimental therapeutic study of DNA and other biomolecules using lasers: advantages and applications. *J Pharmacokin Exp Ther*. 2016;1:e005.
- Alireza 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;2:1.
- Alireza 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.
- Alireza Heidari. Combined theoretical and computational study of the belousov–zhabotinsky chaotic reaction and curtiuss rearrangement for synthesis of mechlorethamine, cisplatin, streptozotocin, cyclophosphamide, melphalan, busulphan and BCNU as anti-cancer drugs. *Insights Med Phys*. 2016;1:2.
- Alireza Heidari. A Translational biomedical approach to structural arrangement of amino acids' complexes: a combined theoretical and computational study. *Transl Biomed*. 2016;7:2.
- Alireza 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 Nanomedine Biotherapeutic Discov*. 2016;6:e144.
- Alireza 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 glyco-biological study. *J Glycobiol.* 2016;5:e111.
32. Alireza 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;6:e138.
 33. Alireza 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;12:4.
 34. Alireza Heidari, An analytical and computational infrared spectroscopic review of vibrational modes in nucleic acids. *Austin J Anal Pharm Chem.* 2016;3(1):1058.
 35. Alireza Heidari, Christopher Brown, Phase, composition and morphology study and analysis of Os-Pd/HfC nanocomposites. *Nano Res Appl.* 2016;2:1.
 36. Alireza Heidari. Christopher 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.
 37. Alireza 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. Alireza 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:e125.
 39. Alireza 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;7:e153.
 40. Alireza 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. Alireza 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. Alireza 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;1:3.
 43. Alireza 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:e110.
 44. Alireza 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:e101.
 45. Alireza 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;8:007-008.
 46. Alireza 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:e161.
 47. Alireza Heidari. Nanotechnology in preparation of semipermeable polymers. *J Adv Chem Eng.* 2016;6:157.
 48. Alireza 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:e119.
 49. Alireza Heidari. DNA/RNA Fragmentation and cytolysis in human cancer cells treated with diphthamide nano particles derivatives. *Biomedical Data Mining.* 2016;5:e102.
 50. Alireza 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. Alireza 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;5:282.
 52. Alireza 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:e143.
 53. Alireza Heidari. The impact of high resolution imaging on diagnosis. *Int J Clin Med Imaging.* 2016;3(6):1000e101.
 54. Alireza Heidari. A comparative study of conformational behavior of isotretinoin (13-Cis Retinoic Acid) and tretinoin (all-trans retinoic acid (atra)) nano particles as anti-cancer nano drugs under synchrotron radiations using hartree-fock (HF) and density functional theory (DFT) methods. *Insights in Biomed.* 2016;1:2.
 55. Alireza Heidari. Advances in logic, operations and computational mathematics. *J Appl Computat Math.* 2016;5:5.