
Alireza Heidari*
Faculty of Chemistry, California South University, USA

Submission: February 26, 2018; Published: March 29, 2018

*Corresponding author: Alireza Heidari, Faculty of Chemistry, California South University, 14731 Comet St. Irvine, CA 92604, USA, Email: Alireza.Heidari@calsu.us


Introduction

In the current study, we have experimentally and comparatively investigated and compared malignant human cancer cells and tissues before and after irradiating of synchrotron radiation using Fourier Transform Infrared (FTIR) Spectroscopy, Attenuated Total Reflectance Fourier Transform Infrared (ATR–FTIR) Spectroscopy, Micro–Attenuated Total Reflectance Fourier Transform Infrared (Micro–ATR–FTIR) Spectroscopy, Macro–Attenuated Total Reflectance Fourier Transform Infrared (Macro–ATR–FTIR) Spectroscopy, Two–Dimensional Infrared Correlation Spectroscopy, Linear Two–Dimensional Infrared Spectroscopy, Non–Linear Two–Dimensional Infrared Spectroscopy, Atomic Force Microscopy Based Infrared (AFM–IR) Spectroscopy, Infrared Photodissociation Spectroscopy, Infrared Correlation Table Spectroscopy, Near–Infrared Spectroscopy (NIRS), Mid–Infrared Spectroscopy (MIRS), Nuclear Resonance Vibrational Spectroscopy, Thermal Infrared Spectroscopy and Photothermal Infrared Spectroscopy. It is clear that malignant human cancer cells and tissues have gradually transformed to benign human cancer cells and tissues under synchrotron radiation with the passage of time (Figures 1-7) [1-75].
Organic and Medicinal Chemistry International Journal


Figure 1: Fourier Transform Infrared (FTIR) Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 2: Attenuated Total Reflectance Fourier Transform Infrared (ATR-FTIR) Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 3: Micro-Attenuated Total Reflectance Fourier Transform Infrared (Micro-ATR-FTIR) Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 4: Macro-Attenuated Total Reflectance Fourier Transform Infrared (Macro-ATR-FTIR) Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 5: Two-Dimensional Infrared Correlation Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 6: Linear Two-Dimensional Infrared Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].
It can be concluded that malignant human cancer cells and tissues have gradually transformed to benign human cancer cells and tissues under synchrotron radiation with the passage of time. Figures 8-15.

**Figure 7**: Non-Linear Two-Dimensional Infrared Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 8**: Atomic Force Microscopy Based Infrared (AFM-IR) Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 9**: Infrared Photodissociation Spectroscopy analysis of malignant cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 10:** Infrared Correlation Table Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 11:** Near-Infrared Spectroscopy (NIRS) analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 12:** Mid-Infrared Spectroscopy (MIRS) analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

**Figure 13:** Nuclear Resonance Vibrational Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 14: Thermal Infrared Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

Figure 15: Photo-thermal Infrared Spectroscopy analysis of malignant human cancer cells and tissues (a) before and (b) after irradiating of synchrotron radiation in transformation process to benign human cancer cells and tissues with the passage of time [1-135].

References


18. Alireza Heidari (2016) Measurement the Amount of Vitamin D2 (Ergo-ka-calciferol), Vitamin D3 (Cholecalciferol) and Absorbable Calcium (Ca2+), Iron (II) (Fe2+), Magnesium (Mg2+), Phosphate (P2O7) and Zinc (Zn2+) in Apricot Using High-Performance Liquid Chromatography (HPLC) and Spectroscopic Techniques. J Biom Biostat 7: 292.

19. Alireza Heidari (2016) 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 7: e112.


44. Alireza Heidari (2016) Synthesis, Characterization and Biospectroscopic Studies of Cadmium Oxide (CdO) Nanoparticles-


Alireza Heidari (2017) Concurrent Diagnosis of Oncology Influence Outcomes in Emergency General Surgery for Colorectal Cancer


Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats (Pdf, E-pub, Full Text, Audio)
- Unceasing customer service

Track the below URL for one-step submission
https://juniperpublishers.com/online-submission.php