

NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism

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Abstract

NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism has been applied in numerous scientific fields, from chemistry and biochemistry to arts and archaeology, as a powerful biospectroscopic technique which allows a spectral fingerprint capable of identifying the structure and function of gum cancer molecules, cells, tissues, or materials. In particular, its application to medical diagnostics has been of increasing interest in the past few decades.

Introduction

NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism has been reported for the detection of different types of ontologies, including cancer [1-10]. A large number of studies concerning the investigation of gum cancer with this particular NMR biospectroscopic technique have demonstrated its usefulness in understanding the disease progression at the molecular level. This review aims to compile the most significant achievements in this emerging research area.

Results and discussion

NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism provides a unique biochemical fingerprint capable of identifying and characterizing the structure of gum cancer molecules, cells, and tissues. In gum cancer, it is acknowledged as a promising biochemical tool due to its ability to detect premalignancy and early malignancy stages. This review summarizes the key research in the area and the evidence compiled is very encouraging for ongoing and further research. In addition to the diagnostic potential, promising results for HPV detection and monitoring treatment response suggest more than just a diagnosis prospective. A greater body of evidence is however necessary before NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism is fully validated for clinical use and larger comprehensive studies

are required to fully establish the role of NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism in the molecular diagnostics of gum cancer (Figure 1).

Conclusion

The physical phenomenon of NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism has been extensively studied. It works on the principle that a small fraction (approximately 1 in 10 million) of the radiation scattered by certain molecules differs from that of the incident beam, and that the shift in wavelength depends upon the chemical structure of the molecules responsible for the scattering. NMR-based metabolomics approach to target biomarkers such as DNA/RNA for new frontiers of diagnostic strategies for prevention, prognosis, diagnosis and treatment of gum cancer tumor metabolism are acquired

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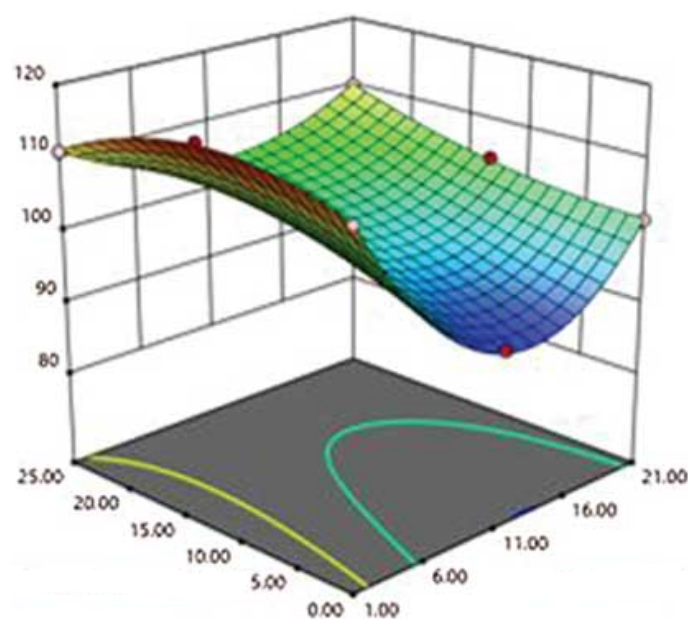


Figure 1. Simulation of NMR-based metabolomics to target biomarkers such as DNA/RNA

by irradiating a sample with a powerful laser source of usually visible or near-infrared monochromatic radiation and measuring the scattered radiation with a suitable spectrometer.

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