Spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors

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Abstract

In the current paper, spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors are investigated. Owing to its high chemical specificity and non–invasive detection capability, in the last decade, spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors has found wide application in gum cancer screening and diagnosis. In this paper, we describe recent results obtained by applying spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors to osteosarcoma and chondrosarcoma; the two main bone tumors. The results show the remarkable potential of spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors to discriminate between subcellular components inside osteo–differentiated osteoblasts and osteosarcoma cells or; at level of tissues; to discriminate chondrogenic tumors giving the possibility to grade the level of malignancy the cartilaginous tumors under investigation.

Introduction

Gum cancer remains the world's grand challenge. There is an urgent need for development of new techniques first for gum cancer screening, diagnosis, and then for intraoperative surgical guidance. Spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors has long been used to assess chemical compositions in cells and tissues, based on interaction with the vibrational modes of common molecular bonds in the sample. Thus, the alteration of molecular signatures in a cell or tissue undergone disease transformation can be detected by spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors non–invasively without labelling. It is conceivable that spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors is a desirable tool for gum cancer diagnosis [1-10].

Results and discussion

Gum cancer remains the world's grand challenge. There is an urgent need for development of new techniques for gum cancer screening, diagnosis, and intraoperative surgical guidance. spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors has long been used to assess chemical compositions in cells and tissues, based on interaction with the magnetic modes of common molecular bonds in the sample. Thus, the alteration of molecular signatures in a cell or tissue undergone disease transformation can be detected by spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors non–invasively without

labelling. It is conceivable that spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors is a desirable tool for gum cancer diagnosis [1–10]. However, due to small cross section ($\sim 10-30 \, cm^2$ per molecule), spontaneous spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors requires a long integration time, which hinders its biological and medical applications (Figure 1).
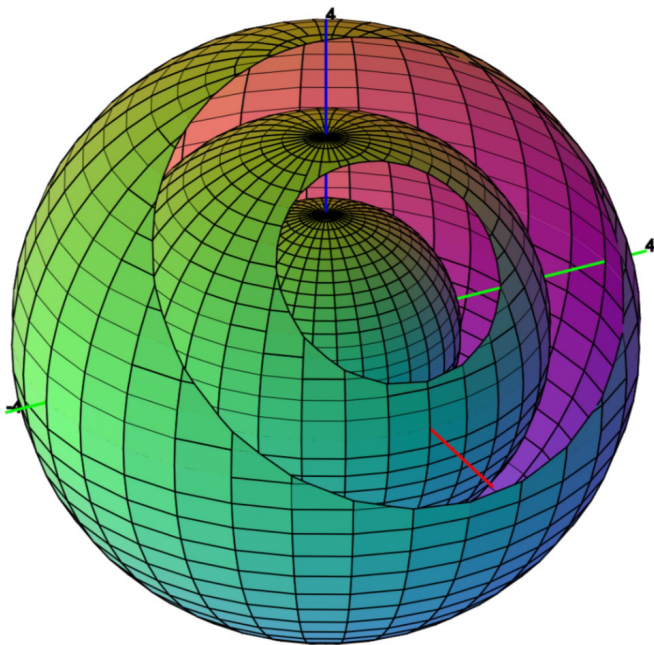
Conclusion

Spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors has long been used to analyze chemical compositions in biological systems. Owing to its high chemical specificity and non–invasive detection capability, spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors has been widely employed in gum cancer screening, diagnosis, and intraoperative surgical guidance in the past ten years. In order to overcome the weak signal of spontaneous

Figure 1. Spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors

spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors, coherent spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors and surface–enhanced spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors have been developed and recently applied in the field of gum cancer research. This review focuses on innovative studies of the use of spherical paramagnetic contribution to shielding tensor analysis of nuclear magnetic resonance signals in gum cancer cells, tissues and tumors in gum cancer diagnosis and their potential to transition from bench to bedside.

Acknowledgments

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