Nuclear Magnetic Resonance

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Definition

Nuclear magnetic resonance or NMR is a scientific technique used to determine structure of organic compounds.

Current Knowledge

The nucleus of any element is composed of protons and neutrons. The nuclei of elemental isotopes have a characteristic spin based upon the numbers of protons and neutrons, while others have no spin. During NMR, elements are exposed to a constant magnetic field and perturbations with an alternating magnetic field. The response to the perturbations in organic substances such as living tissue is used in NMR spectroscopy and magnetic resonance imaging. The introduction of a contrast

agent or functional task in conjunction to the pulse of the alternating magnetic field can give further information about anatomic structure and function. The application of the principles of NMR is best known in magnetic resonance imaging, which is used for diagnostic purposes. This technique is best suited to visualize soft tissues including brain, spinal cord, and other organs.

Further Readings

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