

NMR SPECTROSCOPY

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Introduction. NMR(nuclear magnetic resonance) S is a relatively new physical method of research, which has ample opportunities in the analysis of an increasing number of medicines. There are ambiguities and inaccuracies in assigning a number of signals in the NMR spectra of medicines.

Purpose. Identification of the drug according to NMR spectrum

Materials and methods. NMR-resonance absorption or emission of electromagnetic energy by a substance containing nuclei with nonzero spin in an external magnetic field at a frequency ν (called the NMR frequency) due to the reorientation of the magnetic moments of the nuclei.

1921 - passing through a constant magnetic field beam of hydrogen molecules were able to measure small magnetic moment of the largest of its core. From that time Nobel Prize was given in 1952 by F. Bloch and E.M. Purcell for his discovery of NMR; in 1991 - Nobel Prize was given R. Ernst, in 2002 - was given to K. Vyutrih and later in 2003 in Physiology or Medicine was given P. Lauterbur and P. Mansfield "for fruitful discoveries concerning the use of magnetic resonance for visualization of different structures (NMR tomography)".

NMR- nuclear magnetic resonance . NMR method is based on the interaction of the external magnetic field with nucleus which have magnetic moments (spins non-zero).

In modern NMR spectrometers spectrum recorded with pulses. This spectrum recording method allows to significantly reduce the level of noise and perform experiments much faster.

Positive sides: high resolution, ability to conduct quantitative account of the resonating nuclei, the parameters characterizing the phenomenon in handy for researchers and consumers form.

Conclusions. The NMR is used in many aspects of people life.

Medicine: NMR introscopy; NMR tomography; oncology

Structural analysis: determination of chemical shifts; molecular structure analysis

Other uses: identification reader metal transponders; the manipulation of quantum information (quantum computer).