INSPECTOR: Magnetic resonance spectroscopy software for optimized data extraction

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Technology description

Summary

Magnetic resonance spectroscopy (MRS) is a powerful tool for biomedical research and clinical diagnostic, allowing for non-invasive measurement and quantification of chemical compounds from living tissues. However, currently available MRS processing and quantification software are limited in their potential for in-depth quality management and access to details of the processing stream, and may even lack a user-friendly interface. This technology is a software package for comprehensive in vivo MRS processing and analysis. Known as "INSPECTOR," this user-friendly software has enhanced data management, processing, and analysis capabilities and ensures optimal MRS data management and processing for a wide range of biomedical research and clinical diagnostic applications.

Comprehensive, automated MRS data extraction and analysis with a user-friendly interface

The INSPECTOR software comprises comprehensive processing and analysis functionality for in vivo MRS as a one-stop-shop solution. Extensive data handling, in-depth quality management and visualization options are provided, enabling the assessment of every piece of the processing chain at maximum transparency. Advanced analysis tools are integrated into INSPECTOR, making it ideally suited for in vivo MRS analysis. The details of the quantification algorithm can be flexibly chosen and tailored to the problem at hand, and extended confidence information is provided with the quantification. The software stands out by its potential for automation and its user-friendly workflow. All parameters of the software are automatically maintained in protocol files which can be loaded to restore parameter settings to previously selected values. Besides convenience, functionalities like these ensure reliable and consistent processing throughout multi-experiment studies.
INSPECTOR has been developed and tailored for biomedical research and is currently available for use.

Application area

Non-invasive biochemical analysis of living cells and tissues
In vivo diagnostic spectroscopy

Advantages

Simple, comprehensive user interface and automated workflow
Utilizes advanced data handling and correction algorithms for optimized data management and processing
Reconfigurable and storable parameter settings
Details of quantification algorithm can be tailored to the problem at hand
Enables experimental analysis with high reliability and reproducibility

Institution

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