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Identify Composition & Purity with the Fourier 80

Verify Ingredient Purity and Authenticity

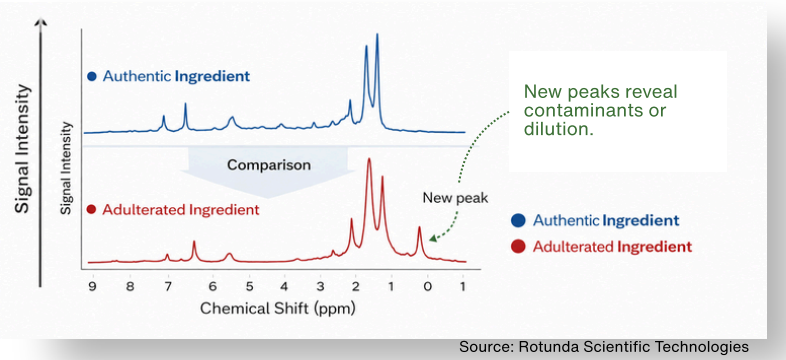
The Bruker Fourier 80 benchtop NMR spectrometer provides rapid molecular fingerprint analysis for ingredient authentication, supplement purity testing, and quality control. Laboratories can quickly identify chemical composition, detect adulteration, and verify product authenticity using simple push-button operation and automated workflows.

Source: Bruker

Identify molecular composition | Detect adulteration | Verify authenticity

How NMR Detects Ingredient Adulteration

Every ingredient produces a characteristic molecular spectrum when analyzed by NMR. Changes in composition create new peaks or altered signal intensities, allowing laboratories to detect adulteration or substitution.



Source: Rotunda Scientific Technologies

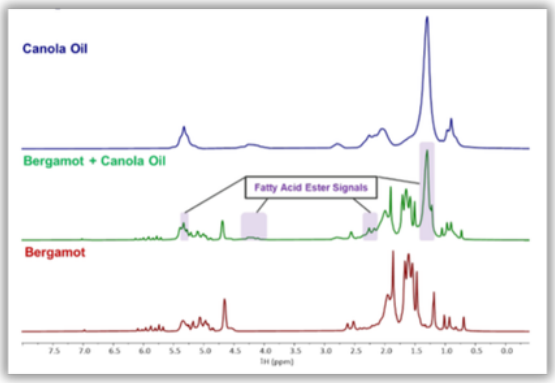
1	2	3	4	5
Prepare Sample	Insert Sample	Run Experiment	Acquire Spectrum	Compare Results

Example: Detecting Essential Oil Adulteration

NMR spectra reveal the molecular composition of ingredients. For example, the unique profile of bergamot oil.

If bergamot is diluted with cheap canola oil, the adulteration is easily detected through the changes in the fatty acid peaks on the NMR.

By comparing spectra of authentic materials and test samples, laboratories can quickly verify product authenticity.



Bruker. (n.d.). Fourier 80 Benchtop NMR for Food and Cosmetic Applications: Optimize Formulations and Detect Adulterations [Brochure]

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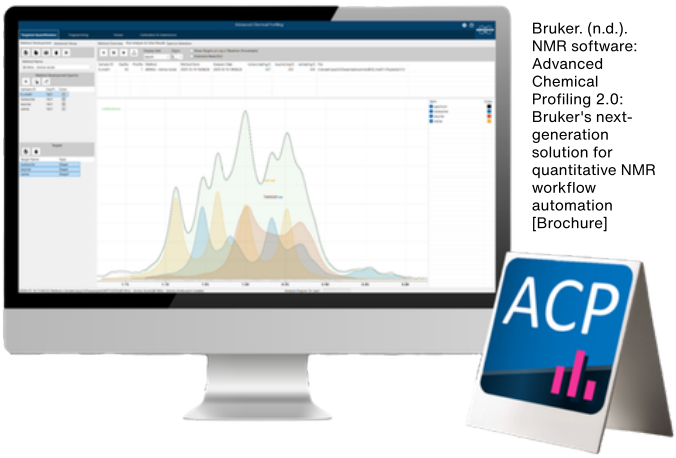


Bruker. (n.d.). NMR software: Advanced Chemical Profiling 2.0: Bruker's next-generation solution for quantitative NMR workflow automation [Brochure]

Automated Analysis with ACP

Using Advanced Chemical Profiling (ACP) software, laboratories can:

- Build a spectral database of authentic products
- Automatically process NMR data
- Identify compounds within samples
- Quantify key components

ACP performs automated data processing, identification, and quantification, enabling efficient routine analysis.

Automated Analysis with ACP

Build Spectral Database
Create library of NMR reference spectra

Process NMR Data
Acquire and analyze results

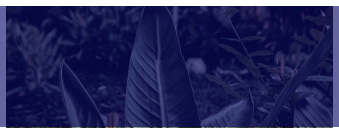
Identify Compounds
Compare with reference spectra

Quantify Key Components
Determine sample concentrations

Example Applications

The Fourier 80 supports molecular analysis across a range of industries.

Food & Flavor Ingredients
- Essential oils
- Edible oils
- Natural flavorings



Nutritional Supplements
- Botanical extracts
- Herbal ingredients
- Natural products

Quality Control and R&D
- Ingredient authentication
- Product formulation
- Reaction monitoring

Interested in more information?

Scan the QR code or click the link below if digital.

Fourier 80 Information