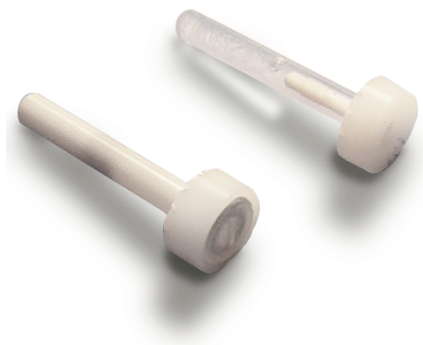


# Agilent Nanoprobe for 400-MR

## Data Sheet



### Introduction

Agilent's Nano probe is ideal for magnetic resonance studies of samples available in only very small volumes, such as natural products, or for non-homogeneous or semi-solid materials. Designed to produce optimal sensitivity and resolution while providing the easiest sample handling and highest versatility, these probes are now available with the 400-MR.

### Key Benefits

- **Most versatile probe available**—Handles liquids, emulsions, and semi-solids such as seeds and tissues.
- **Highest resolution and sensitivity**—Susceptibility matched components throughout enable highest quality data, even on demanding natural product samples, seeds, and food products.
- **Convenient**—Short-neck tube style is easier to fill and empty than traditional 1 mm and 1.7 mm NMR tubes.
- **Higher sensitivity**—The entire sample is contained within the RF coils allowing you to get more signal from small samples.
- **Significantly cleaner data**—Small solvent volume (40  $\mu$ L or less) means less interference from solvent contaminants.
- **Greater sample security**—Fitted caps avoid spillage and evaporation associated with traditional 1 mm and 1.7 mm probes.



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## Highest Resolution and Sensitivity

The Agilent Nanoprobe is built with susceptibility matched components and its geometry enables the complete sample to reside in the RF coils. Together, these design elements provide better resolution than traditional HR-MAS style probes, and higher sensitivity than traditional vertical probes using 1 mm or 1.7 mm tubes.

## Most Versatile

The Nanoprobe is available in two styles – Indirect Detection, optimized for highest  $^1\text{H}$  sensitivity, and Broadband for direct observation of X band nuclei such as  $^{13}\text{C}$ ,  $^{31}\text{P}$ , and  $^{15}\text{N}$ .

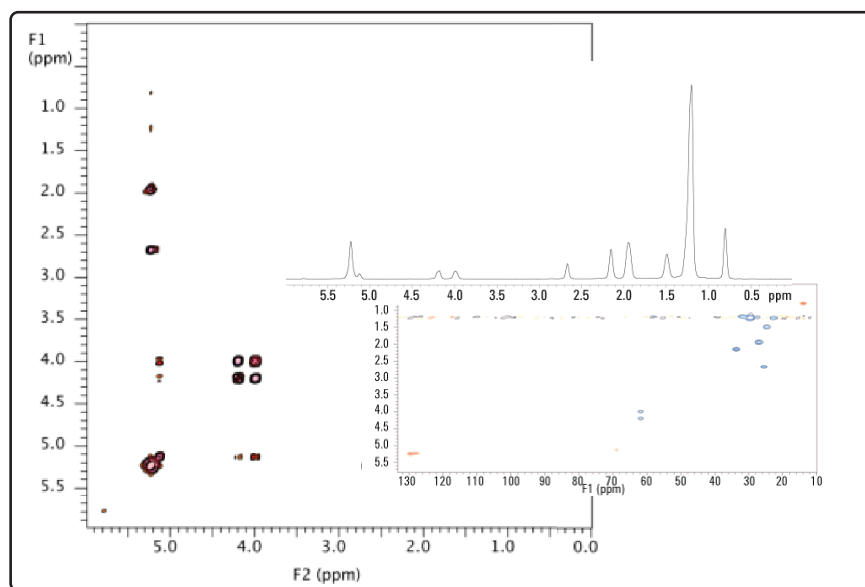
Each probe can be used with either a narrow-mouth sample tube, typically used for liquid samples, or a wide-mouth sample tube, typically used for semi-solid samples. Sample tubes can be used interchangeably and can be ordered separately.

The Nanoprobe can be used for a diverse array of sample types including seeds, food products, cells, tissues and natural product extracts.

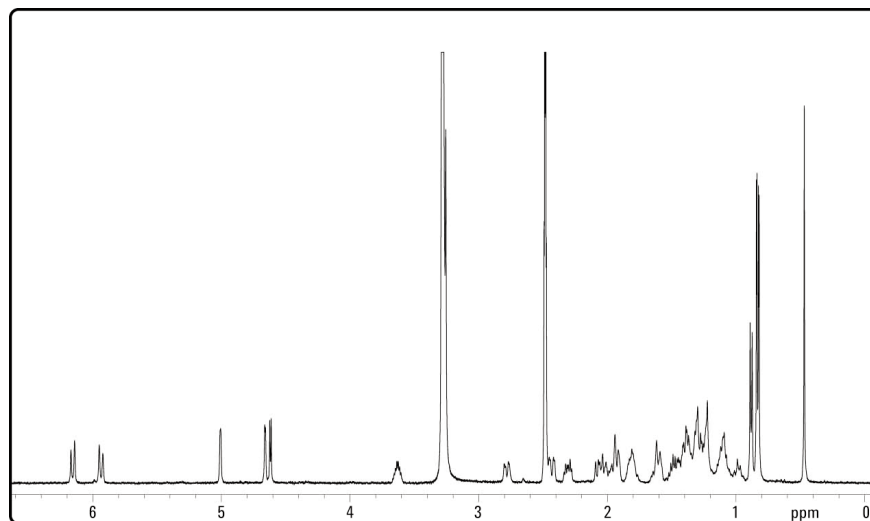
## Applications include:

- Natural product structural elucidation
- Impurity and degradant analysis
- Metabolite identification and quantitation
- Fatty acid and oil analysis of intact seeds
- Chemical composition analysis of food products such as cheese, chocolate, and other emulsions

The Agilent Nanoprobe can be used to run a complete suite of 1-D and 2-D NMR experiments on liquid and semi-solid samples.



**Figure 1**  
 $^1\text{H}$ , gHSQC and COSY spectra of intact sesame seeds, showing oleic and linoleic fatty acids.



**Figure 2**  
 $^1\text{H}$  spectrum of 38.5 µg vitamin-D3 dissolved in DMSO, acquired in less than 5 minutes.

All spectra were acquired on a Agilent 400-MR using an Indirect Detection Nanoprobe.

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Product specifications and descriptions in this document are subject to change without notice.

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